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RSGB BULLETIN

VOL. 37, No. 5

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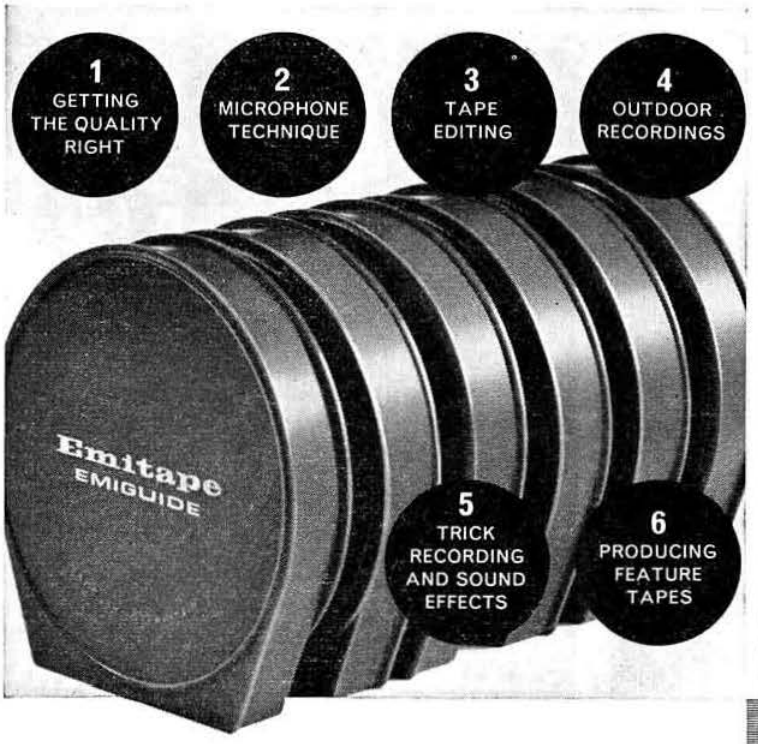

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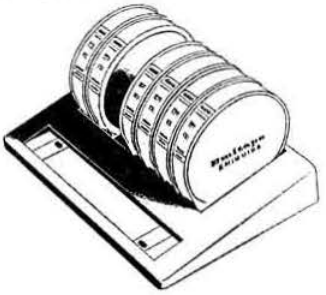

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Volume 37 No. 5
November 1961
2/6 Monthly

R.S.G.B. BULLETIN

CONTENTS

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Current Comment

discusses topics of the day

Panel of Experts

AT the Geneva Radio Conference of 1959 it was decided that a panel of technical experts, with a wide experience of frequency allocation problems, should be appointed as soon as practicable after the Conference to consider measures to reduce congestion in that part of the spectrum which lies between 4 Mc/s and 27·5 Mc/s. This decision was taken because the Conference had noted with growing concern the difficulties which all countries, and in particular the new and developing countries, were experiencing in finding interference-free high frequencies for their expanding long distance radio communications.

The panel of experts met for the first time in Geneva on September 11, 1961, and although the results of their deliberations have not yet been made public it can be assumed that the 7, 14 and 21 Mc/s amateur allocations came in for scrutiny, even if only in a general way.

It has already been announced that prior to the meeting, the International Radio Frequency Board had carried out an extensive series of analyses of the present use of sample portions of the spectrum between 4 Mc/s and 27·5 Mc/s and in collaboration with the heads of the other permanent organs of the International Telecommunication Union had also drawn attention to a number of possible measures which might lead to the more effective use of the high frequency radio spectrum. What those measures are can only be guessed at, but we presume that the greater use of non-radio circuits for certain types of inter-Continental traffic would be among the measures considered.

Without doubt the panel has to face a difficult problem because the number and diversity of radio services utilizing the frequency spectrum between 4 and 27·5 Mc/s is now so vast that it will be impossible for each specific allocation to be looked at individually. On the other hand the best methods of providing essential communication services may vary so greatly between one country and another that a system of communication, which might be technically and economically sound for a highly developed country, may not be so attractive to a lesser developed country, unless some form of economic assistance could be offered.

As Amateur Radio depends entirely upon the radio frequency spectrum for the continuation of its practical existence it can be assumed that the needs of amateurs will be safeguarded at future International Radio Conferences, but as time passes it is certain that licence-issuing authorities will expect amateurs to use the most modern methods available to them in order to achieve the best and most effective use of amateur frequency allocations.

In past years the pages of the R.S.G.B. BULLETIN have consistently reflected new, and often important, developments in the field of Amateur Radio. In the future we hope to devote more and more space to new developments so that when the next Radio Conference comes along the Society will be able to say with justification that U.K. amateurs are employing the very latest techniques in support of their claims for more frequency space.

J. C.

The Handbook

PUBLICATION of the long-awaited third edition of the Society's *Amateur Radio Handbook* later this month is the culmination of the work of more than 40 members who have co-operated in its preparation over the past four years. The result is a big book running to 552 pages in the same format as the R.S.G.B. BULLETIN, bound in linson maroon buckram and designed to stand up to the hard use it will inevitably have. For this is a book to be used by the amateur in the everyday pursuit of his hobby, not one to be glanced through and laid aside.

Whatever the reader's interest in Amateur Radio, be he a dyed-in-the-wool amateur of many years' standing or the newest of newcomers, he will find practical information readily applicable to the problem of the moment.

Comparison with the earlier editions—of which nearly 200,000 copies were sold between 1938 and 1946—reflects the tremendous expansion of the Amateur Radio field in the years since the Second World War; indeed, some of the major chapters in the new edition did not appear in any form in its predecessors: Semiconductors, Single Sideband, Mobile Equipment and Frequency Modulation, for example. The Radio Receivers chapter in the second edition ran to 15 pages: in the third edition, there are separate chapters on H.F. Receivers and V.H.F./U.H.F. Receivers, occupying more than 80 pages plus specialist references under such headings as Noise, Single Sideband and Frequency Modulation. On the other hand, the classic chapter on Crystal Bandpass Filters in the second edition has now been absorbed into other chapters.

Single Sideband operators will find the chapter devoted to their interests one of the most thorough treatments of this mode of operation in Amateur Radio literature. And all readers should find the chapters on propagation, h.f. and v.h.f. aerials of absorbing interest and full of practical advice.

Compiling and producing this first postwar edition of the *Handbook* has been an inspiring task for all concerned. It will, we believe, in turn inspire its thousands of readers as did its predecessors.

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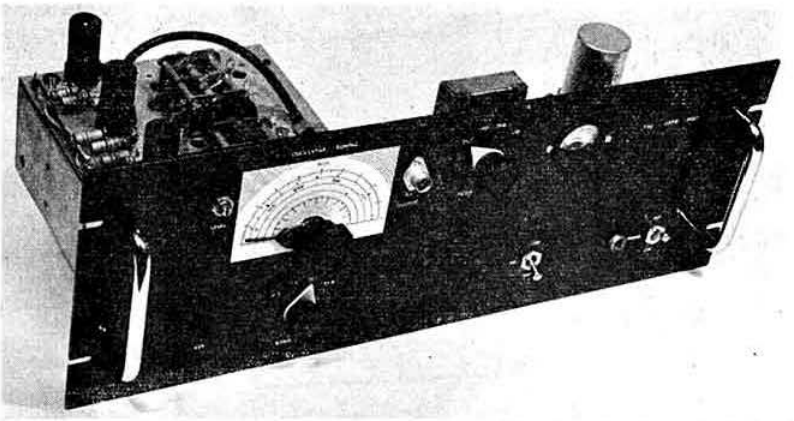
The G8PD "Mixo"

A Mixing Type Exciter for H.F. Transmitters

BY ALAN J. BAYLISS, B.Sc. (G8PD)*



View showing the construction of the "Mixo" exciter. The r.f. section is on the left and the separate power unit on the right.

THE performance of run-of-the-mill communications receivers, particularly on 20m c.w., can be exasperating! About two years ago a special amateur-bands-only receiver was constructed at G8PD which tuned over 1·8 to 2 Mc/s, with a 100 kc/s variable selectivity i.f., and for the higher frequency bands crystal controlled converters were used forming a double superhet tunable on the first i.f. This receiver was an immediate success, the stability, selectivity and constant bandspread on each band making it a pleasure to operate.

The good performance of the receiver very soon showed how poor was the stability of most transmitters encountered on 20m. The transmitter at G8PD was no exception; slowly dissatisfaction turned to disgust and this in turn initiated the design and development of the exciter described

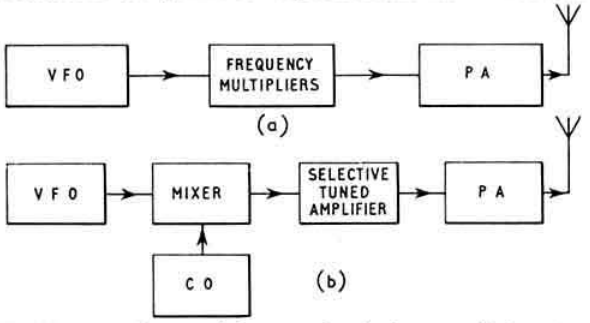


Fig. 1(a). Block diagram of the conventional v.f.o. controlled amateur h.f. transmitter. (b) Block diagram of the "Mixo" controlled amateur band h.f. transmitter.

in this article. The exciter uses the principle of adding the output from a medium frequency v.f.o. to a higher crystal-controlled frequency in order to obtain stable operation with constant bandspread in the bands 15m, 20m, 40m and 80m. The exciter is ideal for the man who, like the author, does not have much time to spend on the air, who wants to slip into the shack and get on the air straight away with a rock stable signal without having to wait for a v.f.o. to warm up and settle down.

The Conventional V.F.O. Transmitter

In the conventional v.f.o. controlled transmitter the output from a v.f.o. operating from 1·75 to 2 Mc/s (say) is multiplied in frequency to provide drive for a p.a. in the higher frequency bands; this is illustrated in the block diagram of Fig. 1(a). By operating the v.f.o. at a low frequency, with care a reasonable frequency stability can be achieved, but such a transmitter suffers from two major disadvantages; first, the frequency drift of the oscillator is multiplied as the oscillator frequency is multiplied and, second, the number of kilocycles per division on the tuning dial increases by the order of the frequency multiplication in the transmitter.

Taking some figures in an example, suppose a v.f.o. covers 1·75 to 2 Mc/s with a dial divided into 100 divisions and suppose also that the oscillator drifts 250 c/s as it warms up. If the output of the oscillator is multiplied by eight to give an output in the 20m band, bandspread would be 20 kc/s per division of the dial instead of the original 2·5 kc/s per division and the drift would be multiplied by eight to give 2 kc/s. A further disadvantage is that any chirp due to keying the oscillator is increased as the output of the oscillator is multiplied up to provide drive in the higher frequency bands.

The "Mixo" Principle

In the transmitter exciter to be described, and which is shown in the photograph, the disadvantages set out in the previous section are overcome by adding the output of a medium frequency v.f.o. to a crystal controlled signal in order to obtain an output in a desired high frequency amateur band. This is illustrated in the block diagram of Fig. 1(b). Clearly the drift at the output frequency is now equal to the sum of the v.f.o. drift and the very low drift of the crystal controlled oscillator, instead of the v.f.o. drift multiplied by the factor necessary to obtain output in the desired band. The bandspread, or kilocycles per division, is the same in any band and excellent keying can be obtained by operating upon the c.o. rather than the v.f.o. This type of exciter has been called a "Mixo" in order to convey the idea that the output frequency is obtained by a process of mixing oscillations together.

The advantages of the "Mixo" technique are obtained at the cost of a more complex circuit which needs more careful design than in the case of the ordinary v.f.o. exciter. On the design side care has to be taken to minimise spurious output or "birdies," which can so easily be generated in mixing circuits; this is done partly by careful choice of frequencies for the variable and crystal controlled oscillators and partly by the provision of sufficient selectivity in the exciter tuned circuits. Several stages operate at the transmitter output frequency and layout and screening are therefore of great importance.

The difficulties just mentioned can be satisfactorily overcome; the idea of mixing frequencies in a transmitter exciter

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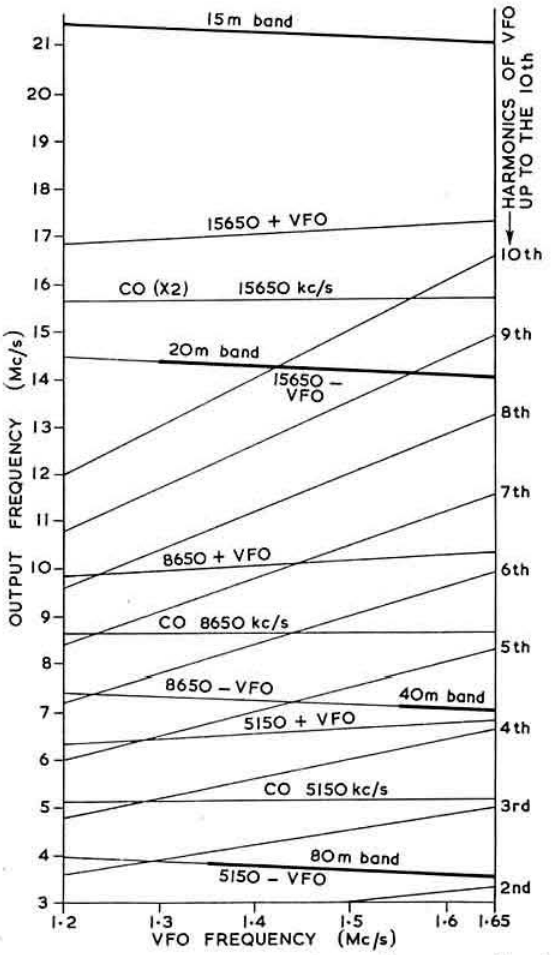


Fig. 2. Some of the more significant frequencies generated in the "Mixo" mixer stage.

is not new, the technique being used in s.s.b. exciters, albeit for a rather different reason.

Choice of Frequencies

The variable oscillator in the "Mixo" must cover a frequency range which is a compromise between as low a frequency as possible for good frequency stability and as high a frequency as possible in order to facilitate adequate filtering out of spurious frequencies generated in the mixing process. The crystal controlled frequencies were chosen so that the readily available, cheap, government surplus FT243 crystals could be used as far as possible.

After considerable thought and calculation the variable frequency oscillator was designed to cover the range 1·2 to 1·65 Mc/s; that is, a range of 450 kc/s, which is equal to the width of the 21 Mc/s amateur band. The low order harmonics of this variable frequency oscillator do not fall in the 80m or 40m amateur bands and are always sufficiently far away from the desired "Mixo" output frequency for adequate suppression.

Crystal frequencies of 5150 kc/s, 8650 kc/s, 7825 kc/s and 7550 kc/s, are used for transposition of the variable oscillator frequency into the 80m, 40m, 20m and 15m bands respectively. In the case of 20m the second harmonic of the crystal frequency, 15,650 kc/s, is used to mix with the v.f.o. and for 15m the third crystal harmonic, 22,650 kc/s, is used. The desired output frequency from the mixing process is the difference between the v.f.o. and crystal controlled injection frequency. Table 1 sets out the frequencies involved.

TABLE 1

Band	V.f.o.	Crystal	Mixer Injection Freq.	Output Freq.
80m	1·65 to 1·35 Mc/s	5150 kc/s	5150 kc/s	3·5 to 3·8 Mc/s
40m	1·65 to 1·55 Mc/s	8650 kc/s	8650 kc/s	7·0 to 7·1 Mc/s
20m	1·65 to 1·3 Mc/s	7825 kc/s	15 650 kc/s	14·0 to 14·35 Mc/s
15m	1·65 to 1·2 Mc/s	7550 kc/s	22,650 kc/s	21·0 to 21·45 Mc/s

Of the quartz crystals chosen only the 5150 kc/s crystal is not generally available in this country as an FT243 surplus type.

Fig. 2 is a diagram which shows the more significant frequencies, which are produced in the mixer stage. On 80m sufficient selectivity is needed after the mixer to reject the second and third harmonics of the v.f.o. On 20m and 15m high order harmonics of the v.f.o. are not significant, but sufficient after mixer selectivity is needed to reject the crystal controlled injection frequency and the sum of the v.f.o. and that frequency.

Not all the selectivity required is provided in the "Mixo" exciter itself; additional selectivity resides in the grid circuits of the buffer and p.a. stages, which follow in a separate unit, and also to some extent in the tank circuit of the power amplifier.

Variable Frequency Oscillator

Fig. 3 is a more detailed block diagram of the exciter, showing the position of the tuned circuits and bandswitching. Fig. 4 is the complete circuit diagram. The v.f.o. is tuned by a 100 pF variable capacitor ganged with the two 25 pF variable capacitors in the tuned amplifier following the mixer. The v.f.o. covers 1·2 to 1·65 Mc/s and is built around the triode section of a 6U8 triode-pentode valve. Temperature compensation is achieved by using a 22 pF ceramic capacitor

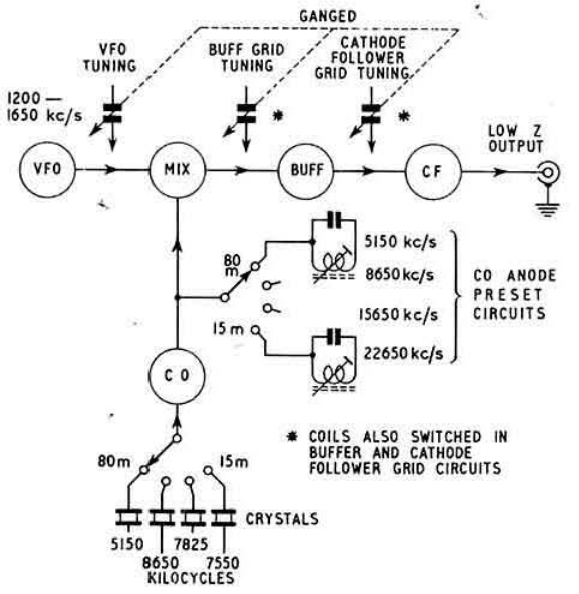


Fig. 3. A more detailed block diagram of the G8PD "Mixo" exciter unit.

of the 750 parts per million per degree Centigrade negative temperature co-efficient type. The value was found experimentally by observing the drift of the oscillator against the crystal oscillator in a BC221 wavemeter. Initially all fixed parallel capacity across the v.f.o. tuned circuit was of the silvered mica type and the positive temperature co-efficient of the coil and capacitor combination caused a drift downwards in frequency as the oscillator warmed up. Some of the shunt capacity was replaced by a ceramic capacitor, first 4·7 pF, then 10 pF and so on, the drift being checked in each case, until it was reduced to an acceptable value.

Crystal Oscillator and Mixer

The pentode section of a 6U8 is used as a crystal oscillator and frequency multiplier; a two pole four way wafer of the bandswitch switches the desired crystal into the grid circuit and the corresponding tuned circuit into the anode circuit. Arrangements are made to meter the crystal oscillator grid leak to check oscillation. The crystal oscillator anode circuits are set up by metering the current in the triode-hexode mixer grid resistor. Oscillation injection is at a level of about five volts peak, being a good compromise between too low an injection giving poor conversion conductance and too high an injection, which yields increased spurious output frequencies without a corresponding increase in wanted output frequency. Both the v.f.o. and c.o. are loosely coupled to the mixer through small value coupling capacitors.

The v.f.o., c.o. and mixer-screen-grid circuits are all fed from a stabilized 150 volt h.t. supply regulated by a QS150/45 gas valve.

The Tuned Amplifier

The rejection of spurious frequencies is achieved by the tuned amplifier following the mixer. High gain is not needed for this amplifier, but high selectivity is essential. The tuned circuits are therefore very loosely coupled to both anodes and grids in order to preserve their Q and therefore their selectivity. For the coils Aladdin $\frac{3}{16}$ in. diameter formers with dust-iron screw cores are used in order to facilitate adjustment of the tracking of the v.f.o. and tuned amplifier circuits. It should be noted that the 2×25 pF tuning capacitor in the tuned amplifier is coupled to the 100 pF v.f.o. tuning capacitor so that when one is at maximum capacity (all in), the other is at minimum capacity (all out). This is necessary because the desired output from the mixer goes up in frequency as the v.f.o. goes down in frequency.

Fixed capacitors are switched in series with the 25 pF tuning capacitors to restrict the effective capacity swing on 20m and 15m. The L/C ratios are chosen to give the correct bandspread to track with the oscillator, and the primary windings are chosen to provide roughly the same gain and output are on all bands, In the tuned amplifier one pentode amplifier followed by an output cathode follower stage are used and the " Mixo " gives an output of between one half and one volt across a 100 ohm load resistor on all bands. A germanium diode rectifier circuit is used to monitor the output from the cathode follower (switch position OUT), and this is very helpful when aligning the tuned amplifier to track with the oscillator.

Construction

The " Mixo " is built on an aluminium chassis with screens underneath to shield the coils of one stage from those of another. A well fitted aluminium cover encloses the whole r.f. section, adequate louvres and ventilation holes being provided in the sides and top. The power supply unit, which provides 210 volts h.t. and a 150 volt stabilized supply for the v.f.o. and mixer screen grid, is mounted on a separate chassis to avoid unnecessary heat reaching the oscillators. No chassis drilling plans are given, but the general layout of the components and method of construction can be seen in the photograph of the underside of the r.f. unit.

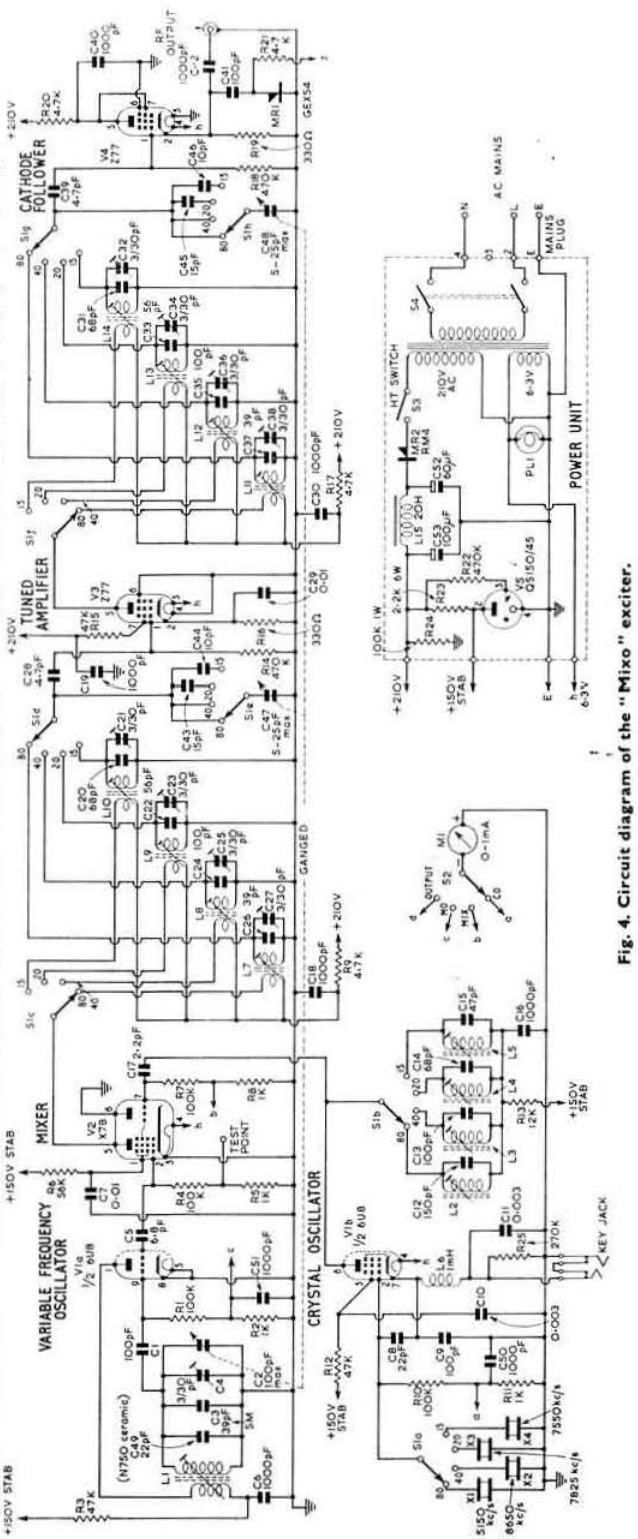


Fig. 4. Circuit diagram of the "Mixo" exciter.

TABLE 2
Coil Winding Details

L	Description	Main Winding			Coupling Winding	
		Turns	Wire S.w.g. enamelled	Inductance (μH) (approx)	Turns	Wire S.w.g. enamelled
1	V.F.O. Coil	90	38	98	15	38
2	C.O. Anode 80m	22	36	5.9	—	—
3	C.O. Anode 40m	13	32	3	—	—
4	C.O. Anode 20m	9	28	1.3	—	—
5	C.O. Anode 15m	6	28	0.85	—	—
7, 11	Amp Grid 80m	40	36	27.5	6	36
8, 12	Amp Grid 40m	15	32	3.4	6	32
9, 13	Amp Grid 20m	8	28	1·6	4	28
10, 14	Amp Grid 15m	5	28	0·63	3	28

All coils are wound on Aladdin $\frac{3}{8}$ in. diameter formers with dust-iron screw cores. More stable and higher Q coils could have been wound on larger diameter formers, but in practice the types chosen have proved adequate and the facility of being able to adjust the inductance by means of the core outweighs any disadvantages. Details of the coils and windings are given in Table 2.

Alignment

The first step is to adjust the v.f.o to cover the required band of 1·2 to 1·65 Mc/s. This is done by altering the position of the dust-iron core in the coil L1, and the trimmer C4, until the correct bandspread is obtained. The reading on the test meter when set to read M.O. grid current (position "MO"), will be about 100 μA.

Next the crystal oscillator should be set up. Plug the crystals into the appropriate holders and set the bandswitch to the 80m position. Adjust the dust-core in L2 until the current in the mixer oscillator-grid circuit indicates 50 μA on the test meter when switched to that position ("MIX"). Switch to the 40m band and repeat the process adjusting the core in L3. In the case of the 20m and 15m bands check that the correct harmonic frequency has been selected by the circuits L4 C14 and L5 C15, by means of an absorption wavemeter. The test meter can be switched to read the c.o. grid current (position "CO"), which will vary from crystal to crystal, but will be between 100 and 200 μA.

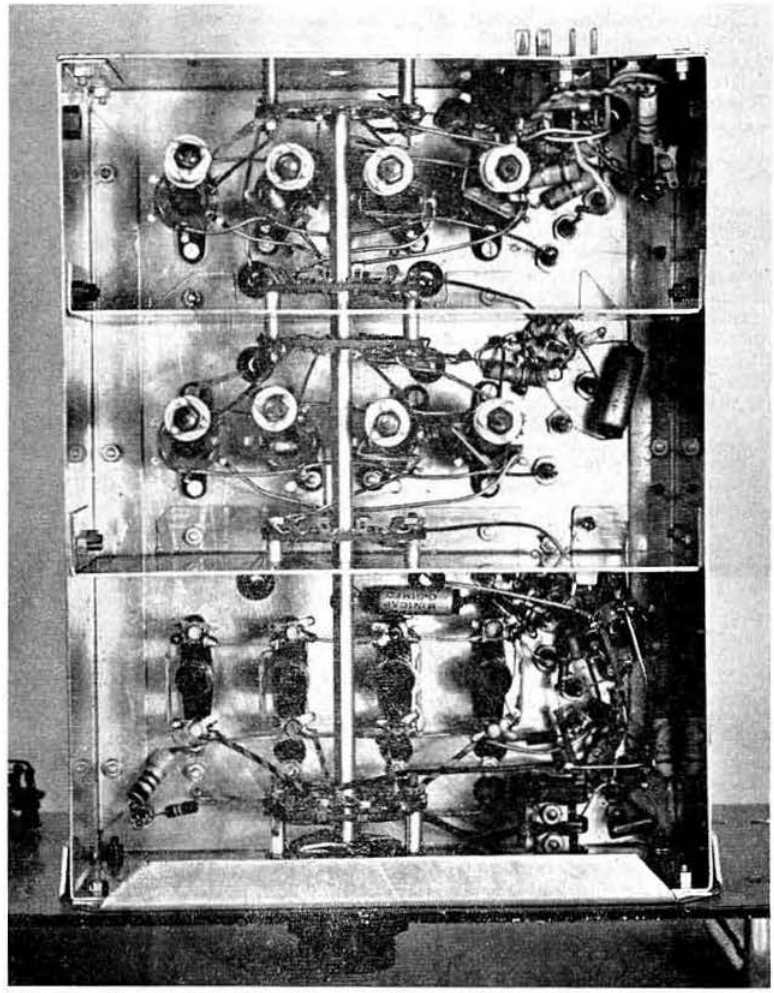
The adjusment of the tuned amplifier to track with the v.f.o. is a little more difficult. Each band is set up in turn and the same procedure is used in each case; for example take the case of the 20m band. Set the v.f.o. to 1·65 Mc/s and switch the bandswitch to 20m. The 7825 kc/s crystal will be in circuit and twice this frequency (15,650 kc/s) will be fed into the mixer. The tuned amplifier must be set to pick out 15,650 −1650 kc/s = 14,000 kc/s, which is the low frequency edge of the 20m band.

Adjust the cores and trimmers of the 20m circuits in the tuned amplifier until an output is obtained, as indicated by the diode r.f. voltmeter measuring the output of the exciter, meter switched to position "OUT". Check that it is the wanted 14 Mc/s frequency, and not the crystal controlled mixer injection frequency, 15,650 kc/s, or the upper sideband frequency, 15,650 + 1650 = 17,300 kc/s by means of an absorption wavemeter.

Tune the v.f.o. towards 1·2 Mc/s and observe the variation in output; successive adjustments of the dust-iron cores and trimming capacitors will lead to the condition where the tuned amplifier circuits remain tuned "on the nose" and a nearly constant output is obtained as the v.f.o. is swept over the band. The meter reading when set to the position "OUT" should be between 100 and 200 μA over each band.

Keying and Power Amplifier

Satisfactory keying, always yielding T9 reports, has been obtained by making and breaking the cathode circuit of the crystal oscillator stage. An alternative would be to key the tuned amplifier. The output from the "Mixo" is sufficient to drive a TT21 power amplifier at full rating with one intermediate buffer stage.



Under-chassis view of the "Mixo" exciter. The crystal and variable frequency oscillators are nearest the front panel.

Measuring Cable Loss by S.W.R.

By O. J. RUSSELL, B.Sc.(Hons.), A.Inst.P. (G3BHJ)*

EXPERIENCE has shown that a frequent cause of poor aerial operation is deterioration of the coaxial cable feeder. The almost invariable reason for this is not so much due to the cable itself, but to the high losses caused by moisture, particularly rainwater, entering the cable. Rain enters the usual amateur installation due to failure to take precautions to prevent the ingress of water. Binding the cable at the aerial end with insulating tape is by itself a futile precaution: the only effective measure is to loop the cable upwards from the connections in a " swan-neck " so that rain cannot run into the feeder.

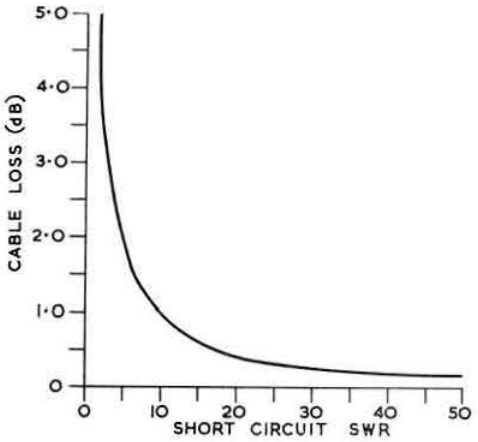


Fig. 1. Cable attenuation plotted against short circuit s.w.r.

A common check upon a length of coaxial cable is to terminate it in a dummy load matching its impedance, and to measure the standing wave ratio (s.w.r.) when r.f. is applied. This test indicates very little, as the effect of cable loss is to ensure that the meter reads close to unity s.w.r. even if the cable is mismatched. It is not generally appreciated that such a test will indicate unity s.w.r. or nearly so with a very lossy cable that is badly mismatched. This arises as unity s.w.r. is the condition for zero reflected power, and an s.w.r. reading of " 1 : 1 " is actually the *zero* of the indicating meter. If heavy losses exist in the cable, the power at the far end will already be attenuated, so that the portion reflected back will be reduced by the attenuation factor. The reflected power will also be attenuated on its return by the cable losses, so that the s.w.r. indication of the meter will be considerably lower than the true s.w.r. existing due to mismatching.

It can be seen, therefore, that an s.w.r. test upon a piece of matched cable is a futile and often misleading test. By reversing the test and measuring the s.w.r. on a completely mismatched cable, a sensitive indication of cable loss is obtained. A complete mismatch is most conveniently arranged by short circuiting the far end of the cable. It is desirable to make the short circuit truly short in a physical sense, as the inductance of some inches of wire at radio frequencies is sufficient, at the low impedance of the usual coaxial cables, to disturb the readings. Hence the cable should be cut short and the outer braiding bridged sharply over to contact the stub of the inner connector. This gives a truly " short " short circuit and will ensure that full sensitivity and accuracy are obtainable so that low values of cable attenuation are easily measurable.

It must be realized that an " infinite s.w.r." means that all the energy sent down the cable is returned to the other end. An s.w.r. meter would therefore indicate the reflected power equal to the forward power in the absence of cable attenuation. The actual loss present in real cables means that the reflected power is attenuated, and the s.w.r. meter indication is somewhat less than infinity. Many meters have the " infinity " position marked, but in any case it is the " setting up " value to which the meter is set before measuring s.w.r. The curve (Fig. 1) shows the values corresponding to a given cable loss, which is the actual attenuation of the total length of cable under test, and enables samples of cable to be rapidly checked for attenuation. Doubtful samples of uncertain age can also be tested for deterioration.

The degree of loss acceptable varies with circumstances. TV feeder, usually rather thin and of high loss, is not suitable for use in other than short lengths unless it is of a special low loss construction. A good cable having a loss of, say, 0·4db per 100 ft. represents acceptable practice. If it is necessary to use extremely long runs of feeder, it may be well worth while to use more expensive cable having lower losses than rely upon cheap lightweight cables.

In practice, an indicated short circuit s.w.r. of 20 : 1 and greater is perfectly acceptable, and a s.w.r. of 15 : 1 is tolerable. Below 15 : 1 however one rather rapidly approaches the level at which losses are inacceptable. Figures of around 12 : 1 are in the doubtful class from a practical viewpoint, and figures of less than this indicate excessive losses. Below 10 : 1, losses rise sharply as the indicated short circuit s.w.r. decreases. A figure of 8 : 1 or less upon a feedline would be good grounds for rejecting it. It should be realized that a high feeder loss may cause difficulties with a beam aerial, and may be the cause of poor results. A close spaced parasitic beam may already have an appreciable mismatch to a standard impedance feeder. If cable losses are high, this mismatch results in increased overall losses and the beam operation may be seriously interfered with. It is for that reason that a nominal cable loss of 1db. is more serious than might be supposed.

A further point is that cable attenuation is much higher at 144 Mc/s than on 14, 21 and 28 Mc/s. A number of s.w.r. meters will operate reliably at 144 Mc/s, so that this elegant method of loss checking may be very illuminating to v.h.f. operators. In any case the test is simply carried out, and provides a direct measurement of the actual loss existing in a sample of coaxial cable. For that reason is of direct interest to any amateur using aerial systems fed with such cable.

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Artificial Earth Satellites

A NEW and very excellent British Astronomical Association publication entitled *Artificial Earth Satellites* contains a full account of the History of the Radio Measurements of *Sputniks 1* and *2*, made by the British Astronomical Association and the Radio Society of Great Britain. This account runs to about 50 pages and covers all aspects of the work carried out by the two Societies with particular reference to that done when *Sputnik 2* was released. The remainder of the book, which is concerned with optical aspects of satellite tracking, is well illustrated and has many excellent diagrams.

By courtesy of the Council of the B.A.A. a limited number of copies have been made available for sale to R.S.G.B. members, price 10s., plus 1s. 6d. postage and packing (the published price is £1).

Members who wrote when details of this publication were first announced are requested to apply again, enclosing a remittance for 11s. 6d.

Right Through at 4·6 Mc/s

A Home-built Receiver based on the Geloso Front-end

By THE REVEREND JOHN CRAWLEY (G3LBX)*

FOR some years the Geloso "front end," has been available to amateurs in this country for building into their own receivers. It has an output of 4·6 Mc/s and is intended to be the first part of a multi-conversion receiver.

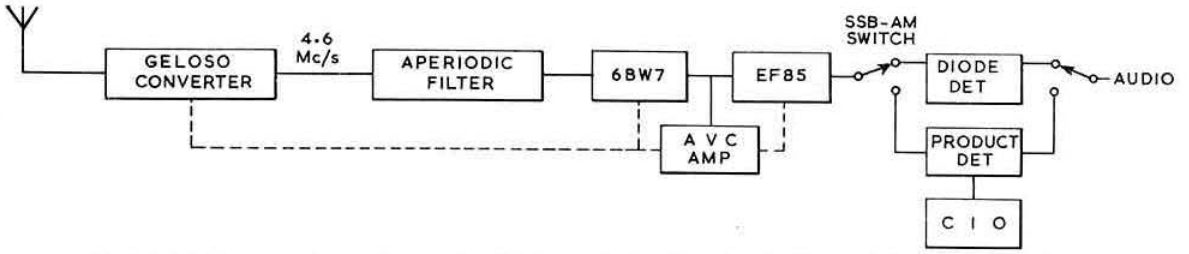


Fig. 1. Block diagram of the complete receiver. The selectivity is achieved by the filter at the beginning of the chain.

The writer has found, however, that a crystal filter in the 4·6 Mc/s range will provide the desired selectivity.

Fig. 1 shows a block diagram of the general arrangement of the receiver. The filter follows the converter and is followed in turn by a high gain i.f. amplifier, a.v.c. and S meter circuit, alternative detectors for a.m. or s.s.b. and the conventional audio stages.

Two types of filter have been investigated. The first type is a cascaded aperiodic filter using no inductances. It has a tendency to "ring" and the neutralizing capacitors to the anode of each triode need careful adjustment. The second type, a lattice configuration, is now in use in the author's receiver and is almost foolproof. It does, however, need greater gain in the following stages and an additional pentode was provided for this purpose.

* *Longhoughton Vicarage, Alnwick, Northumberland.*

Cascade Filter

Fig. 2 is the circuit of the filter. The triodes used are 9002s but other separate triodes work equally well. Double triodes were avoided because of the difficulty of preventing the signal bypassing the filter. It was found that the last crystal in the chain had most control over the passband of the total filter. Staggering the frequency of the crystals to produce a broader passband presented particular difficulties, the best arrangement being three crystals of the same frequency followed by another 1·7 kc/s higher. This gave a passband with steep sides and two humps. Peaking the following tuned circuits to the mid-frequency irons out the humps. The actual frequencies chosen were 4300 and 4301·7, as it was found that the Geloso converter would tune to an i.f. of this frequency and several crystals at 4·3 Mc/s were available.

Fig. 3 shows the details of the high frequency lattice filter. It is of a pattern developed by W3LTN and is of simple construction. There are two sections, each built into its own screening can. With both sections in series the passband is about 2 kc/s wide; to provide a bandwidth of 4·5 kc/s, the switch Sla short-circuits the second section.

The coils L1 and L2 are toroidal and bifilar wound on 1 in. cores (Fig. 4) made from Stanferite S.F.6. supplied by Standard Telephones & Cables Ltd. (Magnetic Dept.) at a cost of 2s. 4d. each. The winding was done with 22 s.w.g. enamelled copper wire. The author used 25 double turns, but this does not appear to be critical. The crystals used have been available for as little as 1s. 3d. each. They were etched up to

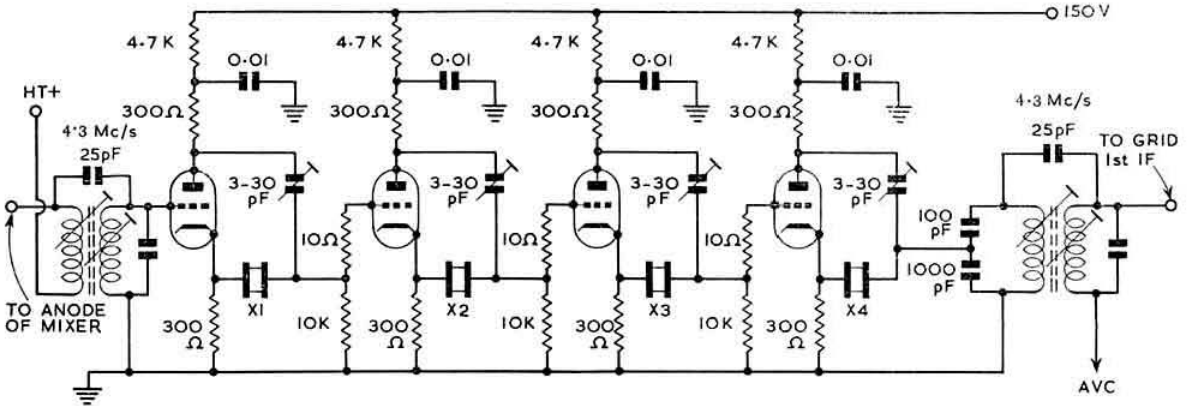


Fig. 2. The aperiodic filter at 4·3 Mc/s. The first three crystals (X1-3) 4300 kc/s and X4 4301·7 kc/s. Any available crystals could be used within about 300 kc/s of 4·6 Mc/s.

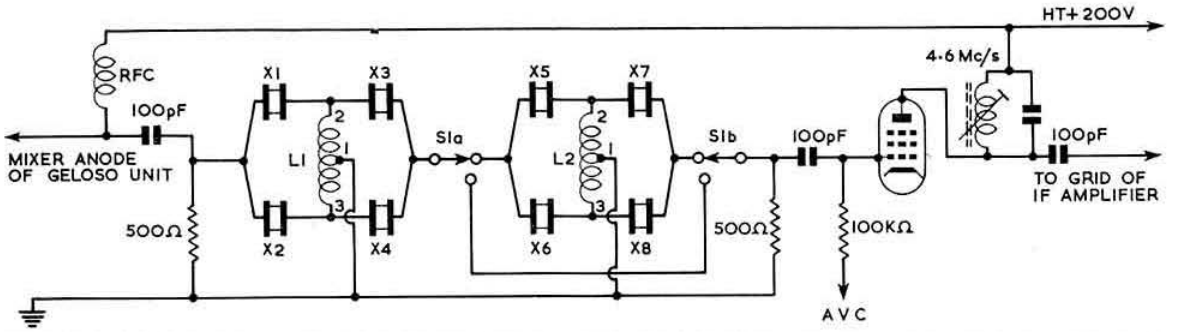


Fig. 3. The lattice-type filter. X1 and X4 are 4600 kc/s; X2 and X3 are 4604 kc/s; X5 and X8 are 4601 kc/s; X6 and X7 are 4603 kc/s.

the frequency required with ammonium bifluoride† and patience. It was found that the coil could be mounted

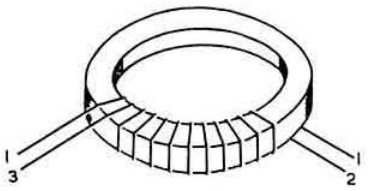


Fig. 4. Winding the toroid coils. The leads marked 1 are connected to earth, as indicated in Fig. 3.

between the crystal cases, the whole sandwich bound together with Sellotape and fitted into an old i.f. can. The filter shown can be followed by a phasing type crystal filter of conventional design to give further selectivity for c.w. work.

The layout is important to avoid leakage of the signal round the filter. It should be designed as a narrow screened channel between the output end of the converter and the first i.f. stage. Leads must be kept short.

I.F. Amplifier

The rest of the receiver is based on the circuit shown in the 1959 A.R.R.L. *Radio Amateur's Handbook* for an i.f. simplifier at 2·125 Mc/s, the only changes being the use of a 6BW7 in the first i.f. stage and a crystal controlled carrier insertion oscillator which can be switched for upper or lower sideband.

The receiver is giving much satisfaction. A very slow tuning rate has been achieved by substituting a very large cord pulley for the small one provided by the makers of the converter and using a high ratio slow motion drive (ex-new-type R1155).

† *Crystal Erosion Made Easy*. Jack Hum (G5UM). R.S.G.B. BULLETIN, July 1960, p. 26. See also pages 178, 244, 388 in Vol. 36.

Poor Man's Beam Aerial

By E. W. HOLT (G3MHQ)*

THE simple aerial shown in Fig. 1 consists of two *V* dipoles, which have their apexes together at the centre to form an *X*. By changing the phase to one dipole, the aerial will radiate either North-South or East-West. For best results each quarter wave arm should be at right angles to the others, although it will work as an elongated *X*, but the radiation may then be greater in one phase than the other, and the loading on the transmitter may change.

The feeder to each *V* dipole is 80 ohm twin (twin plastic flex will usually suffice) and it is essential that both feeders are cut to the same length, from the dipoles to phase change switch. The phase change switch is double pole double throw—in the writer's case a big double knife switch was used (a prewar item that had almost become a junk box heirloom).

A suggested method of erecting the aerial is to attach an arm of each dipole to the two apexes of the house roof and erect two long poles either side of the garden for the other two arms. The feeder from the switch to the transmitter may be made by connecting two lengths of 80 ohm twin in parallel but care must be taken to ensure one feeder does not become reversed and short circuited. The aerial can be made of stranded wire and the insulator for the centre of the *X* from two 6 in. pieces of Perspex bolted in the middle to make a cross.

From reports, the aerial appears to have a 10-20db front to side ratio.

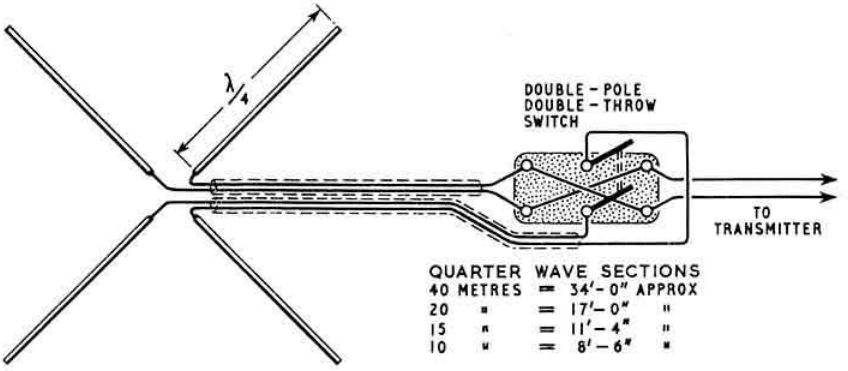


Fig. 1. Construction of the simple beam.

* 26 Beethoven Street, London, W.10.

The HRO as a Tunable I.F.

BY D. A. SHEPHERD (G3LCS, ex-VS1HQ)*

THE main station receiver at G3LCS has been an HRO for the past six years. Like all other receivers of its era, it suffers badly on the h.f. bands from poor sensitivity and image rejection and, under present conditions, from inadequate selectivity. On reading the excellent articles on receivers by G2DAF it was decided to build a crystal-controlled converter for the 14, 21 and 28 Mc/s bands using the recommended circuits.

The prime factor in converter design is the choice of a suitable tunable i.f. Once this has been done the major requirement is a receiver with bandspread over this tunable range. The purpose of this article is to show how the HRO can be modified to tune on bandspread from 5 to 5·5 Mc/s, giving almost 1 kc/s per dial division. The method can be applied equally well to a bandspread range of 400, 200, 100 kc/s, or even less for the 500 dial divisions. The equipment required is an extra 7 Mc/s bandspread coil unless 40 metres is included in the crystal-controlled converter.

Method

The 7 Mc/s coil to be modified is first calibrated and aligned on General Coverage in accordance with the HRO instruction book. Fig. 1(a) shows the basic circuit contained within each can of the plug-in unit. This circuit is in parallel with the main tuning capacitor, Cm, which is also shown in Fig. 1(a). (The oscillator section has an extra capacitor, but this can be ignored for the purpose of this article).

The unit is used on General Coverage with the linking screw joining contacts 3 and 4. The basic circuit then changes to Fig. 1(b) where Cg only is in parallel with Cm. It should be noted that Cg is always in parallel with Cm, regardless of the position of the shorting screw.

Using the unit on bandspread necessitates changing the screws over to join contacts 1 and 2; Fig. 1(c) shows the changes in circuit from which it can be seen that Cg, Cm in parallel are now in series with Ct, their complete total capacity

$$\frac{Ct \times (Cg + Cm)}{Ct + Cg + Cm}$$

being in parallel with Cb.

Ignoring L, Cb and assuming values for Ct (15 pF), Cg (30 pF) and Cm (15-250 pF), then the total capacitance in parallel with Cb becomes

$$\frac{15 \times 45}{15 + 45} = 11 \text{ pF, or } \frac{15 \times 280}{15 + 280} = 14 \text{ pF}$$

i.e. a total change of 3 pF. Assuming Ct is increased to 50 pF, then the two totals become

$$\frac{50 \times 45}{50 + 45} = 22 \text{ pF, or } \frac{50 \times 280}{50 + 280} = 43 \text{ pF}$$

(change of 22 pF). Thus it can be seen that the tuning range depends to a large extent on the value of Ct.

It follows therefore that if L, Cb are set to resonate at 5·5 Mc/s with Cm at minimum capacity then Ct can be padded sufficiently to tune the circuit down to 5 Mc/s when Cm is increased to maximum. With this in mind, Cb and Ct were set to maximum, Cm to minimum and various values of capacitance (silver mica capacitors were used throughout) were tried across Cb in an attempt to bring the frequency down to 5·5 Mc/s. It was found that 50 pF was sufficient, a slight reduction in the oscillator capacitor Cb being all that was necessary to set 5·5 Mc/s at 490 on the dial. Increasing Cm to maximum showed a bandspread of approximately 5 kc/s. Ct was then padded in steps, in each case the bandspread range being increased accordingly. For HRO owners who may only be interested in certain portions of each band, Table 1 shows the approximate degree of bandspread achieved using various common values of capacitance. In each case Cb in the local oscillator can was reduced to set 5·5 Mc/s at 490 on the tuning dial (Cm almost at minimum). A final value of 68 pF gave a coverage of 520 kc/s. Fig. 1(d) shows the basic circuit of each can.

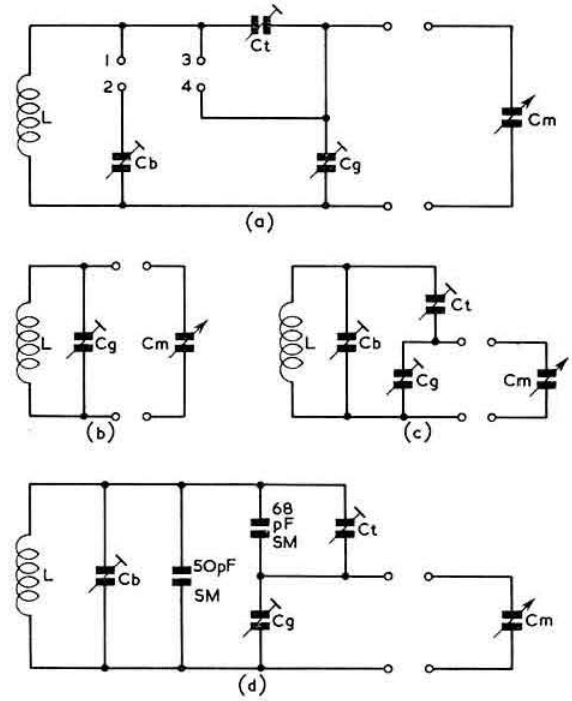


Fig. 1. Circuit arrangement of the HRO coil cans. Cb, bandspread trimmer; Cg, general coverage trimmer; Ct, series trimmer; Cm., main tuning capacitor.

TABLE 1

Capacitance in parallel with Ct and the degree of bandspread achieved.

10 pF	100 kc/s
33 pF	250 kc/s
47 pF	400 kc/s

The four cans were aligned in accordance with the instructions for bandspread coils, 5·5 Mc/s being set at 490 and 5 Mc/s at 10 on the dial (MSF on 5 Mc/s provides a useful check on calibration). The dial readings were fairly linear with frequency and the performance as a whole was excellent.

Using a crystal controlled converter with this coil has given the writer the satisfaction of double conversion and all its associated advantages, together with a degree of bandspread surpassing even that of modern receivers.

Acknowledgement

The writer is indebted to G3NOC and G3PBV of the Wolverton District Radio Club for their valuable advice and assistance.

* *35 The Crescent, Haversham, Wolverton, Bucks.*

Reception of B.B.C. Television Pictures in South Africa

By F. ANDERSON, B.Sc.(Elec.)Eng. (ZS1LA)*

IN 1956 when the trend of the current sunspot cycle showed that a high peak could be anticipated, the writer was assured by veteran observers whose experience dated back to the 1948 peak that it should again be possible to receive the B.B.C. television pictures. Although there was no doubt about the fact that these signals were received in the years centred on 1948, observers were not unanimous about the quality of the pictures which they had seen. The writer decided on a personal investigation to satisfy his own curiosity. As it is now known that solar activity rose to unprecedented heights in 1958, it may be of interest to place on record this aspect of the propagation of v.h.f. signals over the relatively long circuit of about 6,000 miles between London and the southern tip of Africa. Worcester lies 80 miles to the north of the latter point.

Equipment

Keeping in mind the experience of others, the following equipment was designed, constructed and put into operation at the end of September, 1956:

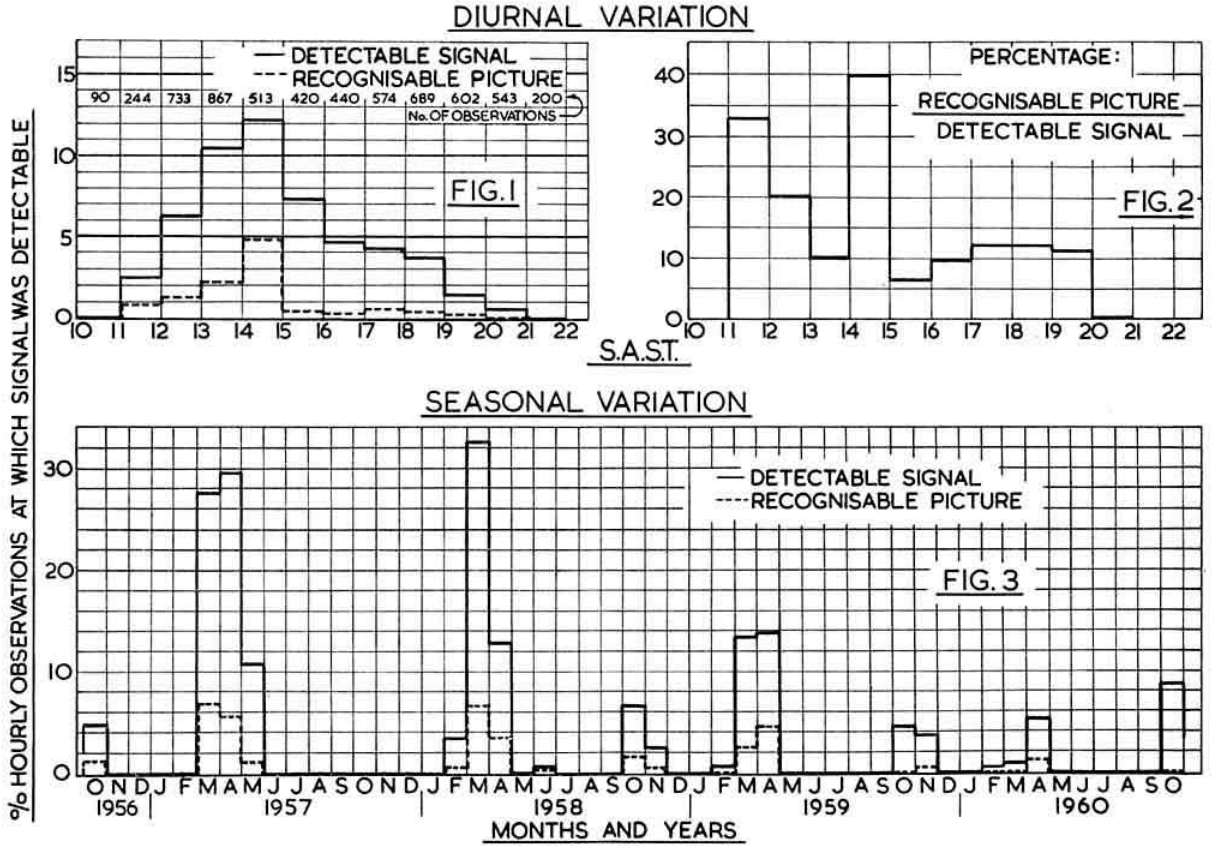
Receiver. The cascode first r.f. amplifier has a noise factor of 3 db. The mixer feeds into two i.f. channels suitably staggered in frequency to pass the B.B.C. sound and video and respectively 200 kc/s and 1 Mc/s wide; the video detector can be switched between these two channels in order that advantage may be taken of the existing narrow bandpass of the sound i.f. channel for video reception under conditions of weak signals or severe interference on frequencies near 45 Mc/s. Display is on a VCR97 cathode ray tube operating at 3 kV e.h.t. with provision for either direct or flywheel line synchronisation. The receiver can be tuned between 38 and 51 Mc/s.

Aerial. Four element vertical Yagi 41 ft. high beaming to England. It shows an appreciable gain and directivity over a dipole at the same height in the reception of long distance signals over the band 41 to 45 Mc/s. A mountain range to the north at an elevation of more than 5° in the direction of London probably cuts off signals arriving at small vertical angles.

Logging Procedure

A record was kept of all signals received in the band 38 to 51 Mc/s, both positive and negative results being entered each time the equipment was switched on, which was usually

* 4 Palm Avenue, Worcester, South Africa.



several times daily between 08.00 and 20.00 G.M.T. for the period October, 1956, until October, 1960.

For the purpose of this report, extracts from these records were made to show the results of observations on 45 Mc/s of the Crystal Palace video transmissions. Looking at the records on an hour by hour basis, the following possibilities existed:

A—No observations were made during that hour.

B—Observations were made, but the 45 Mc/s signals could not be detected.

C—The signal was detected, but no pictures were recognized because of insufficient signal strength, insufficient bandwidth and/or severe interference near 45 Mc/s.

D—Recognizable pictures were received.

As conditions were in general not stable over a period of one hour, each entry was based on the best conditions prevailing during that particular hour. Since a total of nearly 6,000 entries was now available for further analysis, it should be possible to draw reasonably accurate conclusions. Errors due to variations in transmitting and observing schedules should, in the long run, become insignificant. Hourly totals over the 4-year period of C divided by B + C + D and expressed as a percentage yields the diurnal variation of *detectable signals*. Similarly D divided by B + C + D yields diurnal variation of *recognizable picture* reception. Taking hourly totals over monthly periods yields the seasonal variations in the above two quantities.

These results are presented in the graphs of Figs. 1 and 3, while in Fig. 2 the ratio of D and C represents the diurnal variation of picture quality.

Discussion

Fig. 1 shows that signals were received most consistently between 12.00 and 13.00 G.M.T., at which time, according to Fig. 2, the best pictures were also obtained. The signal strength usually peaked during this period but almost invariably multipath effects were very severe, resulting in numerous ghost pictures appearing, all of comparable strength and displaced one from the other by times ranging between a fraction of one line period to perhaps several line periods. The pattern formed by these ghost signals was never stable for more than a few seconds at a time. During the period 15.00 to 18.00 G.M.T. signal strengths were, generally speaking, much less, but multipath effects were less severe, resulting in a rise in Fig. 2.

There is also a rise at 09.00 to 10.00 G.M.T. which is of interest, as it shows that although reception was relatively infrequent at this time, pictures could be resolved on a high percentage of such occasions. This is probably due to the fact that the B.B.C. transmissions only start at 10.00 G.M.T. for part of the year. The presence of many other signals near 45 Mc/s shows that conditions were often good at this time.

During the period 10.00 to 12.00 G.M.T., the signal strength often fluctuated rapidly in a random fashion and since multipath effects were at their worst under these conditions and the synchronising circuits could not cope with variations as rapid as these, pictures were degraded drastically as evidenced by the dip in Fig. 2. It may be of interest to note that a similar form of fading is often present on all signals crossing the equator both at this time and especially after 17.00 G.M.T. It has been suggested that such propagation is a variation of the normal F_2 type in as much as a tilt of the layer and an increase in the ionization density near the equator could be responsible for the elimination of one or more points of ground reflection. Such gradients in density and height at the above times are regularly observed by ionospheric sounders operating near the equator and are associated with the phenomena of spread F and radio star scintillations. The fact that the ionosphere over this region is in a turbulent state may be responsible for the signal fluctuations and the gradients for the observed fact that the m.u.f. for trans-equatorial circuits often exceeds the predicted m.u.f.

On most occasions picture quality was further degraded as only a narrow band of sideband components was propagated at a time. Although this band was usually centred on the 45 Mc/s carrier, this was not invariably the case and groups of line frequency harmonics with 50 c/s frame pulses superimposed were often received at isolated spots within the band 42 to 45 Mc/s when the carrier on 45 Mc/s was very weak or non-existent, being, at the time, above the m.u.f.

Fig. 3 illustrates the fact that reception was concentrated on the periods around the equinoxes. The vernal equinox was usually the better and the peak occurred in 1958. The entire absence of reception during the period September to November, 1957, is baffling, since many other signals were received at this time which lies close to the peak of the current sunspot cycle.

To summarize, it may be said that although the 45 Mc/s video signals were propagated to South Africa for a substantial percentage of the time, reception was usually confined to a bandwidth seldom exceeding 200 kc/s, that random phase shifts were present on video components within this band, that multi-path effects were often present and that interference from other services operating within the video sideband was generally experienced. All these factors combined to produce interesting, if not spectacular, results.

The times quoted in the graphs are South African standard time (G.M.T. plus two hours).

" Mobile Unit for Two Metres "

IN Fig. 2 on page 157 of the October issue of the R.S.G.B. BULLETIN, the emitter and collector connections in TR6 should be reversed.

Single Sideband

By G. R. B. THORNLEY (G2DAF)*

LAST month consideration was given to the effect on the output signal of non-linearity in the power amplifier and how such non-linearity causes "mixing" and the generation of odd order intermodulation products. A chart was given showing the distortion products generated by two input frequencies. It will be noted that the frequency spacing of the distortion products is always equal to the frequency difference between the two original tones. A voice signal is made up of a multiplicity of tones—there will therefore under voice operating conditions be a multiplicity of intermodulation distortion products. These will be present in the transmitted signal and will be heard on the unwanted sideband as blurred and distorted speech that is completely unintelligible—in amateur parlance, as splatter.

When a linear amplifier is improperly adjusted or overdriven the spurious frequencies rise in amplitude and also extend far outside the original channel and will cause unintelligible splatter interference in adjacent channels. Splatter of this type is usually of far more importance than the effect on intelligibility or quality of the original signal. To

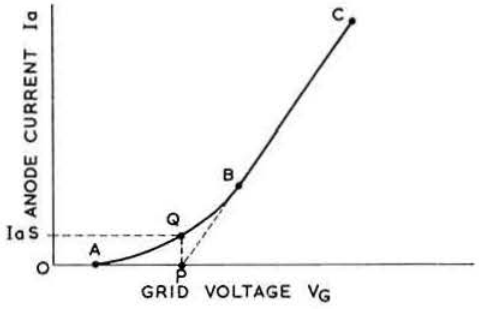


Fig. 1. Ideal valve characteristics for class AB operation.

minimize unnecessary interference the distortion products falling in adjacent channels should be reduced as far as it is possible to get them. Common courtesy on the crowded amateur bands dictates the use of transmitters with as little distortion as the state of the art reasonably permits.

There is clearly no point in going to the effort of constructing a filter that will give 45db sideband suppression and then putting the unwanted sideband back again in the form of distortion products generated in the amplifier stages. A filter with a high level of unwanted sideband suppression deserves a power amplifier with a low level of intermodulation product distortion—one is complementary to the other!

Reducing Distortion

The first and most important means of reducing distortion in a single sideband linear power amplifier is to choose a valve with a good anode characteristic and chose the operating conditions for low odd order curvature. Fig. 1 shows the anode characteristic and the operating point that will allow class AB operation with no odd order distortion products. From point *A* to *B* the curvature is second order or a simple ($I_a = kV_g^2$) curve. From point *B*, the curve continues at the same slope in a straight line to point *C*. The zero signal operating point *Q* is located midway horizontally between *A* and *B*. It is also located directly above the point of projected cut-off, point *P*, where an extension of *CB* crosses the zero anode current line.

Small signals whose peak-to-peak amplitude is less than the horizontal distance between *A* and *B* operate on a pure second-order curve, resulting in no single sideband distortion. When the input signal becomes greater than *AB* it enters a linear region on both peaks at the same time and since the slope of *BC* is correct there is no change in gain of the fundamental components and no single sideband distortion will result at large signals either. The anode current at point *Q* determines the static anode current I_a of the valve and, when multiplied by the d.c. anode voltage, determines the static anode dissipation.

Most valves have a characteristic similar to Fig. 1, although *AB* is not a pure square law and the region from *B* to *C* is rather limited and seldom straight. However, in practice an anode current/grid voltage curve can be plotted from the desired load line on a set of constant current curves, or obtained from the valve manufacturer. By projecting the most linear portion of this curve to intersect with the zero anode current line, the point of projected cut-off and therefore the grid bias and static anode current can be determined. This static anode current is the correct value for minimum distortion.

The screen voltage of a tetrode valve has a very pronounced effect on the optimum static anode current because the anode current of a valve varies approximately as the three-halves power of the screen voltage. For example, raising the screen voltage from 300 to 500 volts will double the anode current. The shape of the dynamic characteristic will stay nearly the same; however, the optimum static anode current for minimum distortion is now also doubled. In practice a limit is reached when the higher static anode current and therefore the higher static anode dissipation exceeds the rated anode dissipation for the particular valve in use. Should this condition arise it is necessary to make a choice between operating the valve at lower than optimum static anode current or alternatively reducing the screen voltage.

Design from the Valve Curves

The operating conditions of a valve operating as a class AB linear amplifier can be estimated from the load line on a set of constant anode current curves for the valve. As an example the characteristics of the GL829B valve are given in Fig. 2.

Assuming an h.t. supply voltage of 500 volts the valve will be biased so that the resting anode current will produce approximately half the rated anode dissipation†. Since the 829B has a rated dissipation of 40 watts for the two sections, the correct bias will allow an anode dissipation of 20 watts—this is 40 mA anode current, or 20 mA for each section of the valve. This resting point, 20 mA at 500 volts, determines one end of the load line and is marked *A* in Fig. 2. From the curves it is also seen that 18 volts of standing bias will be required.

The 829B operating in class AB2 can be expected to have an efficiency of the order of 65 per cent. Since the 35 per cent power loss must equal the maximum rated anode dissipation

TABLE I

Class B Audio or Linear R.F. Amplifier Data for the GL-829-B

(Values given for both sections)

D.c. anode voltage	500 volts
D.c. grid voltage	—18 volts
Peak grid-to-grid voltage	56 volts
Zero-signal anode current	27 mA.
Max.-signal anode current	230 mA.
Max.-signal driving power	0.39 watt
Max.-signal anode input	115 watts
Effective load anode-to-anode	4,800 ohms
Max.-signal power output (audio or peak r.f.)	76 watts

* 5 *Janice Drive, Fulwood, Preston, Lancashire.*

† This is a "rule of thumb" value; the accurate method is to determine the projected cut-off point on the I_a/V_g curves.

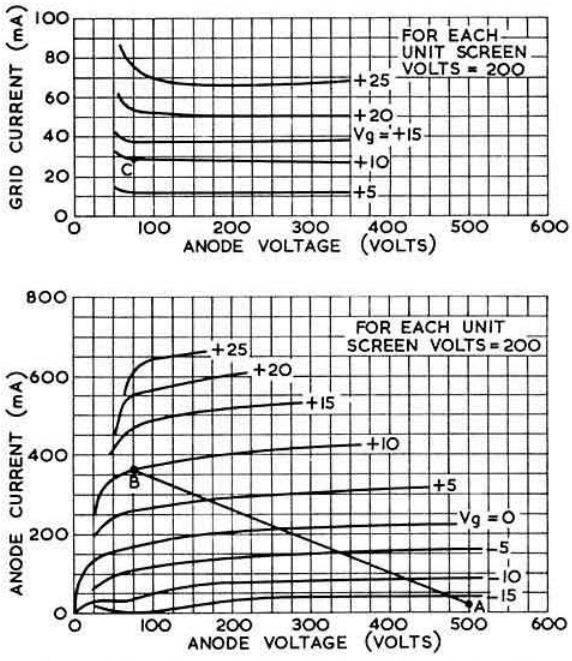


Fig. 2. Average grid and anode characteristics of the 829B.

which is 40 watts (both sections) the total power input (100 per cent) must be 40 × 100/35 = 115 watts. Dividing the maximum power input by the anode voltage will give the maximum signal anode current I_a. In this case the current will be 115/500 = 0·23 amp. = 230 mA. This is the d.c. anode current at maximum signal.

The anode current pulses of a linear amplifier are half sections of a sine wave, such as might have been produced by a half-wave rectifier. In such a waveform the peak current is 3·14 times the value read by a d.c. meter, and this makes it possible to find the peak current, $I_{a\ peak}$, flowing through the valve. Since the d.c. input is 230 mA, then the peak current is 230 × 3·14 = 720 mA, or 360 mA per section. From Fig. 2 it will be seen that 360 mA will flow on the crest of the cycle and that at this instant the anode voltage swings from 500 to 75 volts—a total swing of 425 volts. This determines the other end of the load line marked *B*.

The power output of the amplifier may now be calculated from the formula $W_{out} = I_{a\ peak} \times (V_a - V_{a\ min})/4$. Substituting the values this is 0·360 × 425/4 = 38·25 watts for one valve section—a total of 76·5 watts for the two sections. As a double check this is substracted from the power input of 115 watts and it is apparent that the anode dissipation is 115 − 76·5 = 38·5 watts—just inside the rated anode dissipation for the valve. The actual efficiency is 100 × 76·5/115 = 66·5 per cent, a little higher than assumed at first.

As the valve is being driven into grid current, it will require grid driving power. This may be calculated by reference to the grid current/anode voltage curves in Fig. 2. At the moment of the peak anode swing down to 75 volts, the grid r.f. driving voltage is +10 volts, and the grid current is seen to be 28 mA. This is marked as *C* in Fig. 2. Since the grid starts from −18 volts (the bias) this will be a peak r.f. grid swing of 28 volts. The driving power is one-quarter the peak r.f. volts multiplied by the peak grid current, in this case 7 × 0·028 = 0·195 watts (one valve section). As there are two valve sections in parallel the total driving power is 0·195 × 2 = 0·39 watts.*

Principal Anode Characteristics

From the set of constant current curves and the load line, the principal anode characteristics can be estimated by using the following relationships for a *single* frequency test signal:

D.C. anode current (I_a) = $I_{a\ peak}/3{\cdot}14$

Anode input watts (W_{in}) = $V_a \times I_a$

Average output watts and p.e.p. (W_{out}) = $I_{a\ peak} \times (V_a - V_{a\ min})/4$

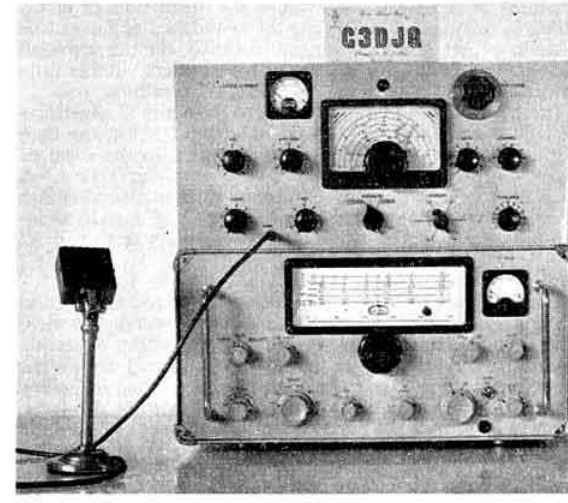
Anode efficiency (Eff.) = $3{\cdot}14 \times (V_a - V_{a\ min})/(4 \times V_a)$

(Note that V_a is the d.c. h.t. supply voltage, and that I_a is the steady anode current as indicated on the anode current meter. The product of these two is the p.e.p. input.)

There are many occasions when an amateur wishes to use a valve that is available for linear amplifier service but has no constant current curves available. As an exercise take the case of a popular valve type—the 813. Suitable supply voltages are 2,000 for the anode and 600 for the screen. The rated anode dissipation is 125 watts. It is desired to run the valve in class AB1 with an expected efficiency of 55 per cent. Therefore the loss of 45 per cent = 125 watts anode dissipation, and 100 per cent (the total power input) = 125 × 100/45 = 277 watts. The input of 277 watts divided by the h.t. supply voltage = 277/2,000 = 0·138 amp. = 138 mA, and the peak current ($I_{a\ peak}$) = 138 × 3·14 = 433 mA. The power output (W_{out}) = $I_{a\ peak} \times (V_a - V_{a\ min})$ divided by 4. Assuming that the instantaneous anode voltage is allowed to swing down just below the value of the screen voltage ($V_a - V_{a\ min}$) = 1,450 volts. The power output (W_{out}) = 0·433 × 1,450/4 = 156 watts.

To check the figures, the output power is substracted from the input power, 277 − 156 = 121 watts, which is less than the rated anode dissipation and is satisfactory. The actual efficiency (Eff.) = 100 × 156/277 = 56 per cent, very close to the estimated figure.

As the valve is not being driven into grid current, no grid driving power is necessary other than the small amount needed to overcome the input circuit loss.



This G2DAF-designed station was built by Basil Oliver, M.B.E., G3DJQ (ex-VS2AD) of Sutton Coldfield, Warks. The s.s.b. transmitter is shown here standing on top of the double conversion amateur bands receiver.

* This does not include circuit losses. The formula $V_{g\ (peak)} \times I_{g\ (max)}/4$ is an approximation commonly used for design purposes.

THE MONTH ON THE AIR

A CHRONICLE OF EVENTS ON THE HF AMATEUR BANDS

By R. F. STEVENS (G2BVN)*

THE conditions now prevailing are typical of those that may be expected during the winter months. Daytime maximum usable frequencies are higher than during the summer, and lowest usable frequencies during the hours of darkness are considerably lower. On the trans-Atlantic path to New York it is predicted that the m.u.f. will be in excess of 30 Mc/s between 14.00 and 16.00 G.M.T., whilst the l.u.f. will drop to 3 Mc/s at midnight, giving the possibility of North American contacts on all bands from 3·5 to 28 Mc/s. The path to Hawaii now appears likely to be productive on 14 Mc/s only between 17.00 and 19.00, but the short path to Melbourne should be workable between 08.00 and 09.00, when the m.u.f. is at its highest. Unfortunately there is no assurance as to the reliability of the predicted conditions and there will undoubtedly be a number of days when 28 and 21 Mc/s will be devoid of anything but local signals, and short skip will prevail on 14 Mc/s.

News from Overseas

Kamaran Island and Grand Cayman Island, the first in the Red Sea, 200 miles north of Aden and two miles off the coast of Yemen, and the latter 200 miles west of Jamaica and 180 miles south of Cuba, have recently accommodated two outstanding successful DXpeditions. The Royal Air Force A.R.S. personnel who went to Kamaran Island from the United Kingdom and Aden are to be heartily congratulated on the results achieved and high standard of operating maintained throughout. It is a pleasant task to record the details of a DXpedition so ably staffed by United Kingdom operators. The certificate hunters are now suggesting a new one entitled, "Worked all VS9K"! The operation from Georgetown on Grand Cayman was also a major success and the eight operators worked all bands and all modes. The stations were located in a hotel within view of one of the most attractive beaches in the West Indies, and the hospitality and assistance of the residents were a large contributing factor. After the return of VP5BL to Jamaica, the DXpedition used the call of VP5BH, a seagoing operator whose home is on Grand Cayman.

The operation from **VR1M** did not, unfortunately, yield the expected number of European QSOs, partly due to indifferent conditions; G3JFF fills in the rest of the story. After arrangements had been made via VR1A, the Government wireless officer, a QTH in the radio workshop at Tarawa was made available. The transmitter used was a much modified Panda Cub, taking about 75 watts input and the receiver, an Eddystone 750, was supplied by the local transmitting station. The aerial consisted of a wire, 360 ft. in length, supported between two 70 ft. masts. Operation commenced on September 20, but it was almost impossible to hear any other stations through the solid wall of W6s. Due partly to the heat and humidity component failures in the transmitter caused much lost time. A fair amount of time was spent in listening on 21 Mc/s in case an opening to Europe should materialize, but this did not occur. The maximum amount of time that could be spent operating was about 4½ hours a day, and 397 contacts were made with stations in 37 countries. Mike points out that this was not a DXpedition, but operation sandwiched between shipboard duties, visits to the island and restricted by a sparse boat routine to the shore four miles away. QSLs will be handled by W1HGT for contacts with North and South American stations, whilst GW3LQP will perform these duties for the rest of the world. *H.M.S. Cook* will be returning to Tarawa, probably in March/April, and it is hoped that things will then run a little more smoothly. In the meantime, operation from **YJ1MA** will take place in November, probably commencing around November 18.

VQ1FU will be the call of Frank Buckley, ex-VQ4FU, who will be staying in Zanzibar for up to a year. He hopes to be active shortly and his QTH is P.O. Box 84, Zanzibar.

KC6UZ in the East Carolines was contacted by a number of European stations in the early months of this year, but so far no QSLs have materialized. According to KC6BH, who is now active from Truk, KC6UZ, formerly the Commanding Officer of the Trust Territory, is now in the U.S.A., and any possibility of obtaining a QSL has vanished. One can only conjecture as to the fate of the IRCs and stamps accompanying the QSLs.

During his five weeks of operation in Tonga, VR5Z made about 2,800 contacts on 3.5, 7, 14, and 21 Mc/s using s.s.b. and c.w.

** Please send all reports to R.S.G.B. Headquarters to arrive not later than November 20.*

VS1GQ will be spending six months' leave in Europe commencing mid-December, and will square up the QSL account before leaving. VS1GQ is one of the most active Singapore stations and hopes to meet personally many of the operators he has contacted.

5N2BRG will be in the United Kingdom from December 1 and will be pleased to remedy any omissions in so far as QSLs are concerned. His United Kingdom QTH will be 19 Redriff Close, Maidenhead, Berks. Ralph mentions that to date 1,000 cards from 5N2 have brought only 300 replies, which is considered to be very disappointing.

The Nyasaland Police Signals are represented on the amateur bands by **ZD6PR** (ex-G3IRQ), **ZD6GA** (ex-G3KKN) and **ZD6HK**, the stations being located at Zomba, Mzuzu and Blantyre respectively. ZD6PR and ZD6GA both use TA33 Jr. beam aerials and are active on s.s.b.

MP4BBW will be using a new 75S1-32S1-30L1 combination during December, and hopes to put in an appearance on the l.f. bands, with the arrival of this equipment. DXCC now stands at 247/239 and s.s.b. countries at 229/217. Ian rightly comments on the poor quality signals emanating from certain East European countries, hoping that this state of affairs will not continue.

5A4TC, Stan Crabtree, has now taken over the duties of the QSL Bureau for the prefixes 5A1 to 5A5 and his address will be found in *QTH Corner*. Stan is active on c.w. and will be looking for United Kingdom contacts on 3·5 and 7 Mc/s after 21.00. Of the various Libyan stations, 5A2CV and 5A3CAB are now QRT, and 5A4TA will shortly be closing down. Active operators include 5A's 1TA, 1TP, 2TC, 2TO, 3TK, 3TY, 4TA and 4TC. All operators who have held Libyan calls are asked to forward their present QTHs to 5A4TC, so that outstanding QSLs may be forwarded.

The Origin of that Word

At last the true origin of the word " ham " is known. According to a script sent by K9QIZ to G3ILS one of the first amateur stations in the U.S.A. was that of the Harvard Wireless Club. The operators bore the names of Hyman, Almy and Murry, and the identification letters used were HYALMU. This apparently caused some confusion and the first letter of each name only was used, thus forming the word HAM. This was recorded for posterity when Hyman appeared before a committee dealing with the " Wireless Regulation Bill " in 1911, and frequent references were made to the station HAM, which was also mentioned in Congress. Shades of Popov!

DXpeditions

VK4RZ, the operator of **VR5RZ**, is now back at his home QTH in Queensland and QSLs have been received by many European stations, who were fortunate enough to make a QSO. VR5RZ was granted the sixth amateur licence issued in the Kingdom of Tonga, and contacts were made with 2,800 stations in five weeks, using s.s.b. and c.w. on the bands 3·5 to 21 Mc/s. Reception conditions, except for Europe, were generally excellent, although a few outstanding signals were heard on s.s.b. around 21.00 local time. After his experience at Tonga VR5RZ considers that one operator on s.s.b. can make more QSOs per hour than a c.w. operator plus a person log keeping. For him the DXpedition was the most exhilarating experience radiowise after 35 years of hamdom's frustrations. As a result of the operation the basis of a radio club is being formed in VR5 and an ex-ZL may soon be on the air using c.w.

The **Kamaran Island** DXpedition consisting of G3GJQ, G3GPE, G3OCV, G3NAC, VS9AGA, VS9APH and VS9AAC arrived on " The island of two moons " at midday on October 5, having travelled the 200 miles from Aden in a Shackleton of R.A.F. Coastal Command. The equipment on the air by midnight of the same day consisted of: (i) a DX100 and SB.10 combination with a Geloso 209R and a TA33 Jr. beam; (ii) a KW Victor, with an AR88D using a full-size G5RV aerial, and (iii) a KWM-2 with a half-size G5RV. Power problems limited early operation, but separate supply lines and larger fuses overcame these. The DXpedition closed down at 06.30 on October 16, and by then 5,500 QSOs with 130 countries had been completed. All bands were used and intense activity into Europe on 28 Mc/s was noted on October 8, when one-a-minute QSOs were the order of the day. At one time there were two transmitters in operation on 14 Mc/s s.s.b., with only about 15 kc/s separation; this, apparently, caused a considerable amount of concern in North America. QSLs for the stations should go to G3GJQ, whose home address appears in *QTH Corner*, and who provided the above information.

On the subject of QSLs, **VE3BQP** has the logs for the operation from **ZD1ES**, and a number of unclaimed cards, which he will be pleased to send on receipt of s.a.e. Eventually the remaining cards will be sent through the bureaux. **HK3LX** will continue to dispense **HK0TU** QSLs, air mail costing four IRC and sea mail two IRC.

Operating from **Grand Cayman** under the calls **VP5BL/5** and **VP5BH** were W8FGX, W4OMW, W4AZK, W4CKB, W4QVJ, W3AYD, VP5BL and VP5BH. All bands and all modes were used, and amongst the equipment operated were a KWM-1 and a 32S-1 and 75S-1 combination, together with a two element beam, vertical aerials and dipoles for 14 and 28 Mc/s. The first full day of operation produced an average of 58 QSOs per hour, but openings to Europe were limited.

The HB9TL portable s.s.b. transmitter commenced its Caribbean travels with a stop at **VP3YG**. Unfortunately the transmitter was slightly damaged during its journey, and initially the quality was not good. The future destinations of the transmitter will be organized by PJ2AA, and the extent of its travels will depend on the amount of outside help which is available to defray freightage costs. Any assistance will be welcomed by PJ2AA at Dakota Airport, Aruba, Netherlands Antilles. The crystal controlled frequencies of the rig are 14,274, 14,281, 14,294, 14,304 and 14,314 kc/s. QSLs for stations in Zones 1 to 13 (North and South America etc.) go to W4OPM, whilst QSLs for Zones 14 to 40 (the rest of the world) go to G8KS or G2BVN, both of whom will

QTH Corner

FK8AZ	P.O. Box 40, Noumea, New Caledonia.
FP8BU	via W9HPS
FG7XI	V. Lima, Maison Arconte, Cape Sterre, Guadeloupe.
HH2CL	C. Lebreton, Banque Nationale, Port-au-Prince, Haiti.
HH2OT	via K0GZN
TA2AR	via PA0WWP, P.O. Box 33, Soest, Holland.
TT8AG	via W3KVQ
UA0BP	P.O. Box 328, Krasnoiarsk, 37, U.S.S.R.
VK9GP	R. Baty, Cable Station, Norfolk Is., via Sydney, Australia.
VK0VK	via W1AGS
VK0WW	via K4MRT
VP2DA	P.O. Box 64, Roseau, Dominica, West Indies.
VP2LD	via W4CKB
VP3YG	via G8KS or G2BVN
VP5BH	via W4OMW, 1015, Highway Avenue, Covington, Kentucky, U.S.A.
VQ3HH	via W2CTN
VR2DK	via W2CTN
VS9K	Sgt. R. Handley, 9 South Avenue, Royal Air Force, Swanton Morley, E. Dereham, Norfolk.
XW8AS	MAAG Laos, Box 179, APO 152, San Francisco, California, U.S.A.
ZD6HK	P.O. Box 24, Blantyre, Nyasaland.
ZD6RM	P.O. Box 472, Blantyre, Nyasaland.
3A2AE	via DJ6JN
5A4TC	
5A QSL Bureau	S. Crabtree, No. 1 Forces Broadcasting Station, B.F.P.O. 57

* * *

R.S.G.B. QSL Bureau: G2MI, Bromley, Kent.

ZD6PR (ex-G3IRQ) in Zomba, Nyasaland, has a Labgear LG300 transmitter, an Eddystone receiver and a Mosley TA33 Jr. aerial.

have copies of the logs of the various stations from which the portable transmitter will be operated.

ZC4CT reports the postponement of his trip to MP4 land, due to Service commitments, and now expects to make the journey in March or April next year.

DXCC News

Confirmations from Kamaran Island will be acceptable for DXCC credit starting February 1, 1962. (There is always a waiting period of three months before credit is given.)

Contests

With the first half of the *CQ World Wide DX Contest* already past, the c.w. section will take place during the weekend November 25 to 27. Details will be found on page 177 of the October issue of the BULLETIN. Log forms may be obtained from G2BVN by sending a s.a.e.

The results of the *PACC-Contest 1961* show that G3JUL (c.w.) and GW3LAD (c.w. and 'phone) were leaders for their respective countries.

Rules for the **R.S.G.B. 21/28 Mc/s Telephony Contest,** and the **Receiving Contest,** to be held concurrently on December 2/3, will be found on page 180 of the October issue of the BULLETIN.

A leaflet giving the full details of the **OK DX Contest** to be held on December 2-3 is obtainable from G2BVN.

Awards

Two new awards are announced by the Ontario DX Association: **The Canadian Award,** which may be claimed by operators who can send a list, certified by one official of a radio club, or by two other licensed amateurs, showing the date, time, band and definite locations of the stations contacted, which must consist of the following: five contacts with each of the eight VE call areas; five contacts with VO1/VO2; one contact with a VE0 maritime mobile station; and of the five VE8 stations, one must be in the Yukon Territory and one must be located on one of the off-shore islands of the North West Territories. Any band or any mode may be used, and contacts after World War II are valid.

Applicants for **The St. Lawrence Seaway Award** must produce a certified list showing contacts with 10 VE stations, located along the route of the St. Lawrence Seaway. Of these 10 contacts, four must be with the following areas, one from each: Port Arthur or Fort William, Greater Toronto, Greater Montreal, and Greater Quebec City. The remaining six contacts may be with stations located in any municipality along the route of the Seaway. Seals will be awarded for 20, 40 or 50 contacts. Any band or any mode may be used, and the commencing date is July 1959. Applications for the above awards should be made to The Ontario DX Association, Wm. A. Wragg (VE3BQP), 127 Castlewood Road, Toronto, 12, Ontario, Canada. The cost of either award is $1, or equivalent (eight reply coupons).

In order for those amateurs interested in earning points to obtain the **Ohio Vally Award,** members of the O.V.A.R.A. will hold a QSO party beginning December 22, 1961, and continuing until January 1, 1962. Members will operate 30 kc/s above the low edge of all bands on c.w., 28 to 1·8 Mc/s, and will call CQ OVA.

A revised edition of the *R.S.G.B. Certificates and Awards* leaflet is now available. This includes an up-to-date list of the British Commonwealth Call Areas.

The trophy offered by Peter Card, **W1WDD,** to the station making the 100th QSO for his **Empire DX Certificate,** has gone to VR6TC, who was one half hour ahead of VR6AC.

Holders of the **USA-CA Record Book** are asked to note that the column headed " Date Worked " should be altered to " City/Town," and applicants must list the latter information.

Applicants for the certificate offered by the **Ex-G Radio Club,** for contacts with six of the members should send their QSLs to G8KS (together with reply postage). The certificates will be forwarded from the U.S.A.

In connection with the **H-22 award,** which is offered by the Swiss national society, U.S.K.A., for contacts with 22 Swiss cantons, G8PL notes that there is no permanent station in the canton of Uri, but that a station will be operating from there during the next HB contest in April.

DX Briefs

JZ0ML (G3MJL) is now active from Dutch New Guinea, generally between 06.00 and 11.00, using a.m. and c.w. on 14 and 21 Mc/s. QSLs should be marked via G3MJL and sent to the R.S.G.B. Bureau.

XT2Z (9G1GP) caused quite a stir when operating during the telephony section of the *CQ* Contest. The first s.s.b. station to be heard from Upper Volta, he asks for QSLs via the 9G1 Bureau.

MP4TAN (ex-6O2AB) will be operating for four weeks from October 29 from Trucial Oman. He will be looking especially for U.K. stations on 14 and 21 Mc/s. The QTH is: Sgt. D. F. Higgins, Trucial Oman Scouts, B.F.P.O. 64. (G3BHW).

The latest issue of the **DX-QSL-Newsletter,** published by K6BX, contains upwards of 2,000 listings of QSL managers and bureaux. This invaluable aid, which is produced quarterly on a non-profit basis, may be ordered through G2BVN, the annual subscription being 11s. 6d.

During a recent QSO with VP8EG, G8KS queried the possibility of operation from South Sandwich Islands, and obtained the information that this group is mainly volcanic and that it is impossible for personnel to remain ashore for more than a few hours. Obviously radio equipment would suffer rapid deterioration.

In a QSO with G3AAE, **VQ8BC** mentioned that he has a permanent invitation to visit **Rodriguez Island,** so that there may be possibilities of operation from this rare spot.

It is hoped that the SB.10 sent to **VS9MB** at the Maldive Islands, will shortly be in use, thus producing the first s.s.b. activity from this location.

XT2A who has provided many with their first QSO with

Upper Volta left for France at the beginning of November, and QSLs should now be sent through the R.E.F.

UM8FZ and **UG6AW** will be providing permanent s.s.b. representation from their respective countries, and **UA0KIB** is hoping to finish his s.s.b. equipment by the beginning of December, and he will then be able to make up for lack of activity from Zone 19. This club station is located in Magadan.

FZ8PF worked by many recently and claiming to be on Crozet Island is definitely a pirate. This rare spot may be activated by **FB8WW** early in 1962.

TA2AR has been sending QSLs direct to stations contacted, and is apparently the only licensed amateur in Turkey, although others are expected on the air in the near future. Arrangements have been made for PA0WWP to act as QSL manager for QSOs after September 27, 1961.

It is reported that **SM5BUG/9Q5** was killed in the air crash in which Mr. Hammarskjold lost his life recently.

From the **Gilbert and Ellice Islands**, VR1A is not very active; VR1B is active on 14 Mc/s s.s.b.; VR1G is going to the United Kingdom for two months commencing in November, and VR1J is VR2AB on temporary duty. (G3JFF/VR1M).

VP3RW, who has put in such a consistent signal from Georgetown on 21 Mc/s, is now QRT, and is travelling to the United Kingdom, via North America. He will be settling in Wales and hopes to be on the air with a GW call in due course. (G3MWG).

If this should catch the eye of **VP2KD**, or any person who may be aware of his present address, W1TQS would be pleased to have this information.

ZD7SA is on his way to the U.K. and **ZD7SG** has arrived in St. Helena for a three-year tour with Cable and Wireless. He expects to be active shortly (via G2GM).

VS1KF, who is the acting secretary of the M.A.R.T.S., during the absence on leave of 9M2DB (now signing GI3MLR), casts doubts on the legitimacy of VS1DL and VS1GX, both recently mentioned in *M.O.T.A.*, and who are not known at Singapore. VS1KF was recently on s.s.b. and at the present time there is no one active on s.s.b. from Singapore. New calls in this part of the world are VS4RM and VS4RS.

The U.S.S.R. Bureau operating from Box 88 does not normally accept international reply coupons for onward transit to individual stations. Where direct QSLs are sent it is worth noting that two IRCs are required for the surface mail reply and four IRCs for a reply by air mail. The cost of an air mail letter from Moscow to the United Kingdom is nearly three times as much as a letter sent by surface mail.

Band Reports

The winter season on **1·8 Mc/s** began with QSOs between W3FYT and K2DGT and stalwarts G3PU and G6HB. Signals were RST549 between 05.30 and 06.10. Our reporter **B.R.S. 20317**, mentions that in many cases QSB during a long transmission prevents identification of W stations. **3·5 Mc/s** has shown a spectacular improvement since last month, with openings to the Americas and New Zealand. North American stations are usually heard between 23.30 and 07.00, with ZLs audible from 06.00 to 07.30. Amongst the stations heard have been ZL4OD, ZL4AV, ZL2AIX and ZL2AAG, all on s.s.b. C.w. has also produced results and ZL3FZ, ZL4GA and HK3AH have been heard at good strengths. The Grand Cayman DXpedition was heard on s.s.b. between 05.00 and 06.00 at 59, with HR3HH also putting in an appearance.

DXotic Showcase

Call-sign	kc/s	Mode	G.M.T.	Country
VP5BH	3,510	c.w.	05.45	Cayman Is.
VP5BL	3,800	s.s.b.	05.00	Jamaica
ZL4OD	3,788	s.s.b.	06.15	New Zealand
VK0TC	7,004	c.w.	22.30	Antarctica
VP5BL/5	7,006	c.w.	06.30	Cayman Is.
G3GPE/VS9K	7,010	c.w.	23.00	Kamaran Is.
AP5CP	14,056	c.w.	16.00	E. Pakistan
FO8AC	14,080	c.w.	10.15	Oceania
VR4CV	14,070	c.w.	07.50	Solomon Is.
FK8AZ	14,315	s.s.b.	11.50	New Caledonia
VP3YG	14,314	s.s.b.	11.00	British Guiana
5U7AC	21,080	c.w.	10.15	Niger
TA2AR	21,200	a.m.	11.10	Turkey
ZD7SE	28,360	a.m.	16.05	St. Helena
ZS7L	28,300	a.m.	16.30	Swaziland

The **7 Mc/s** band has been less productive than usual, due to the increase in jamming activity, against which the usual selectivity have little effect. **B.R.S. 20317** reports a fair amount of activity during the VK/ZL contest, with stations logged between 19.00 and 08.00, including VK6RU, VK6SM, VK5NO, VK3DQ and VK2GW. The only ZL logged during the contest was ZL3IS (05.50). In other directions the band opens to the U.S.A. at around 20.30 closing to the East Coast around 08.00. West Coast stations have been heard between 05.30 and 07.45, the best being W6RW, W6HB and W6BYB. The Kamaran Island DXpedition was logged at 23.00 (G3GPE/VS9K), and also HZ1AB, VE3BQL/SU, EP2BB (21.20), JA1EUV (19.17) VP9EP (22.50), VE8DU (23.20) and rare CE4GH (22.36). Another DXpedition worked was FP8AS on St. Pierre (06.38), with TI2WR (03.11) heard from Costa Rica. Little is reported from Africa and only ZS1JA (20.25) and 5N2IND (22.14) merit mention. An unusual one widely worked from the U.S.A., but not so far mentioned in the United Kingdom reports, is **M1H** (7,008, 23.50). Known to be active on s.s.b. is KG1BX, but unfortunately many of the DX stations do not seem to be aware that our band is now restricted to 7,000 to 7,100 kc/s, and frequently do not tune for replies below the latter frequency.

Once again **14 Mc/s** has carried the major portion of the DX available with c.w. and s.s.b. predominating. On the former mode **G2FFO** records QSOs with XT2A (18.24), FP8AS (20.00), VP5BL/5 (20.48), VQ8BM (18.15), and VS9KAC (19.32). In company with many other United Kingdom stations G2FFO was disappointed at the lack of signals heard from G3JFF, during his operation as VR1M. Other worthwhile DX worked on c.w. includes: BV1US (13.50), FO8AC (07.00), JZ0ML (15.30), and VR4CV (08.10), and **G8PL** mentions KW6DM ('075, 06.50), TA2BK ('064, 05.00), VK9GP ('090, 06.25), and 5U7AC ('072, 06.55). G8PL mentions that W4ML QSO'd ZD9FV, but from other sources this call is said definitely to be of piratical origin. **PY7LJ** has now left Fernando da Noronha, which leaves this spot without amateur representation. On s.s.b. **GW3AHN** contacted HB1MQ/FL, KC4USV, KC6CG (W. Carolines), the two DXpeditions and ZD6PR. Ian, **MP4BBW**, worked most everything worthwhile on this mode, and on his extensive list appear: CR9AH (14.46), DU1VQ (14.54), EA6AZ (15.23), FK8AC (03.22), HE9LAA (14.04), HS1X (13.48), HM4AQ (14.27), KC4USN (15.27), KB6BR (11.41), KC6AY (14.41, E. Carolines), KC6CG (16.29), KX6BU (10.15), PJ2AA (20.09), UA2AO (15.13), UF6FB (15.30), UH8DA (13.32), UI8AG (12.01), UW9CC (12.20), VK7AI (14.38), VS1KF (12.05), VQ8BR (13.43), VQ3HH (17.24), XU6AL (14.31), XW8AS (13.29), ZC4PC (12.30), ZB1A (15.42) and ZS7P (15.21). The HB9TL portable transmitter at its first stop, **VP3YG**, was worked by several United Kingdom stations at around 11.00 on 14,314, including G3NUY and G8KS. **Zone 19** s.s.b. operation was undertaken by **UA3AT/0**, who went by plane from Moscow with the portable transmitter, which was also on the air under the calls **UA0BP/0** and **UA0KFA.** There has been a considerable amount of s.s.b. activity on the low end of 14 Mc/s, particularly from the West Indies, South America and Canada, and a careful listen on the portion 14,120 to 14,150 is often productive. The 15 kc/s at the high end, allegedly reserved for DX stations, has not proved attractive, and the phone patchers and creepy-crawlies still hold sway.

(Continued on page 227)

FOUR METRES AND DOWN

By F. G. LAMBETH (G2AIW)*

THE Second Northern V.H.F. Convention, organized by the North Western V.H.F. Group, was held at the Grosvenor Hotel, Manchester, on October 14, 1961. The Convention opened at 1.30 p.m. with a reception desk for arriving visitors and an exhibition of trade and Amateur Radio equipment. A station using the Group call-sign G3OHF/A was in operation from the hotel to guide mobiles to the car park arranged by the R.A.C. while G3KMS/M was despatched to a site near Buxton, about 1,600 ft. a.s.l., to provide an early link with mobile stations.

During the afternoon, there were two coach trips to the Jodrell Bank Observatory, by kind permission of Professor Sir Bernard Lovell. For those who could not go on the trip, a film was shown of the construction of the radio telescope. Following the film, D. Clift (G3BAK) gave a very informative lecture and demonstration of micro-wave techniques.

Approximately 140 people sat down to an excellent dinner in the evening, at which the chair was taken by Austin Forsyth, O.B.E., G6FO, editor of *The Short Wave Magazine*. The speakers included R. C. Hills (G3HRH), chairman of the R.S.G.B. V.H.F. Committee and Harry Wilson (EI2W) who spoke about international co-operation.

The proceedings concluded with a grand draw, and raffle.

The Society was represented by R. C. Hills (G3HRH), who was supported by W. H. Allen (G2UJ) and F. E. A. Green (G3GMY), members of the V.H.F. Committee.

Auroral Opening

There was an excellent auroral opening on October 28, 1961, when G5MA (Great Bookham) worked several GMs, DL6OS and OZ5BK during the first phase and more GMs during the second. G3ILD (Darlington) is reported to have heard or worked SP and OK stations.

G3OSA (Wimborne) heard several GMs, GI5AJ, GI3OFT and DX Gs. G3ABH, also in Wimborne, heard DL1, DL6, DL9, ON, PA, GI, OK2BD (O?) and SP4GZ during the first phase. G3NAE (Bournemouth) and G3OBD (Poole) also had auroral QSOs.

G3HRH (Digswell) heard several GMs and worked GI3GXP.

Tropospheric Opening

G3LTF (Galleywood) had a wonderful spell of success in the period October 12-16 when the band was at its best for a very long time. Dresden TV was peaking to S8 and a few DLs were worked at 350 miles, also GI3FJA, GI3ONF, and EI2A. On the 13th Dresden was S9+ with up to *25* sidebands audible, so the top part of the band was useless when beaming east. DM0VHF was heard on 144·035 Mc/s at 569. Many GMs were worked as well as DM2ABK and HB1QQ for a new country, with several DJ/DLs. During a QSO with DJ3ENA, the German station reported having just worked SM7BAE on 70cm. On the 14th the first CQ call was answered by LX1SI followed by HB1QQ again and GD3UB for a new country and SM6ANR. Among others HB1KL, HB9KM, HB9BZ and several F stations provided welcome QSOs.

On the 15th (08.00 G.M.T.) SM7BAE was worked, signals being *five points* better than on the previous night. In the evening SM6PU, SM6ANR were raised again also DL6EZA and then came the real plum: OE9IM called CQ and G3LTF called him and had a QSO, making a total of three new countries during the opening. Then HB9KI (he was home by then) was worked again followed by various DLs in South Germany and OK1EH/P (near Pilsen), a very good signal; DM2ABK was the last QSO that time. After all the time spent chasing OE by meteor scatter it was very easy to do it by tropo! G3LTF thinks this is the best opening since October 1958. DL1LB is reported to have worked an OH0 (Aaland Islands) but no Polish stations appeared to be on. Previous to these stirring events little of note happened until October 2. G3LTF's trip to GW was unfortunately a failure owing to lack of transport. On the few occasions when operation was possible, only GW3IGY, G3KPT and G5ML were worked and G3NBQ, G5YV, G3MED, G3EGK, G6NB, G3MNQ, G5MA, and GB3VHF were heard. On October 2 GM3EGW was worked on c.w. out of the blue!

V.H.F. Managers' Conference

The Seventh I.A.R.U. Region I V.H.F. Managers' Conference took place between October 13-15 in Turin, and was attended by 11 V.H.F. Managers, delegates and observers, including G2AIW as Secretary of the Permanent V.H.F. Committee, and R.S.G.B. V.H.F. Manager. Many subjects of v.h.f./u.h.f. interest were discussed and extracts from the proceedings will appear next month. Two results of the deliberations are that the I.A.R.U. contest times revert to 18.00 G.M.T. on Saturdays to 18.00 G.M.T. on the Sunday of contest weekends, and that a 70cm/24cm Contest, with no 2m distractions, will be held between these times

During the Region I I.A.R.U. V.H.F. Contest on September 2-3 1961, G3LTF/P was operated by G3JMA (left) and G3LTF.

* *R.S.G.B. V.H.F. Manager, 21 Bridge Way, Whitton, Twickenham, Middlesex.*

during the last weekend in May. The latter should go a long way towards removing the many objections of enthusiastic operators, mainly on 70cm, who have hitherto thought they were rather left out of the picture because 2m generally took pride of place in multiband contests. 70 and 24cm will still be workable during the regular March, May, July and September contests if so desired.

Sincere thanks are hereby recorded to the President (I1FA) and V.H.F. Manager (I1XD) of A.R.I. for their bounteous hospitality to all who went to Turin and for the excellent arrangements made for our comfort.

Two Metre News and Views

B.R.S.21476, who used to be at Penarth, is now at Shrewsbury and the gear is now rigged up to a hastily erected dipole only 10 ft. above ground level. Stations heard on October 15, the first day of operation, were G3ASC, a semilocal, and, surprisingly, G3EHY at S9, and G5DW at S7, all in only a few minutes look round. These were locals at Penarth and it was hardly expected to hear them so strongly at the new QTH on such an inefficient aerial.

G3JR (Barnes), still with an indoor Yagi, and 12 watts, had late evening QSOs with ON4CP and DL2XM (c.w.) and PA0LX on phone. GW8SU is often heard having a late c.w. QSO but cannot be raised after he signs. GW3MFY has also been called frequently and a QSO is hoped for soon. On the evening of October 12 it was a delight to work EI2A on phone (56 both ways) for the twelfth country. On October 13, GW2HIY was heard working DL9GU. Also heard was GM3HLH/A at 549 for the first GM by tropo. At noon on October 14, G3JR had a first phone QSO with G3ILX (Barrow), 56 both ways, and in the evening called HB1KI (RS44), GI3FJA, GI3ONF (c.w.) but without result. On October 15, LX1SI was called " optimistically."

G3HWR (Hampstead) found October 12 and 13 good for the British Isles. The evening of the 14th brought contacts with EI, GI, GD, GM and northern G stations. The morning of the 15th was good but conditions afterwards tapered off. On the Sunday afternoon many G stations were heard working HB stations. **G3HRH** (Digswell) worked DJ3ENA on the 15th. This station is 40 km north of the Swiss border at a TV transmitter high up in the Alps. His frequency is 144·18 Mc/s. The frequencies of HB1KI and HB1QQ were given as 144·64 and 144·34 Mc/s respectively. OK1EH/P was on 144·52 and LX1SI 144·38. On October 14 whilst mobile near Rugeley, G3HRH/M was copying G3ILX (Barrow) at S9+ and whilst at Stoke, G3FZL was heard working GM3HLH/A on phone. **EI2A** is making a great mark on this band and EI2W reports that he worked his first Continental just before these notes were written.

GW2HIY (as G2HIY/M in Lincolnshire) with 12 watts, had an interesting time at the end of August. Between the 20th and September 2 many stations were worked over a wide area, including PAs, DLs, ON, F and OZ, mostly on a ½ wave dipole 8 ft. above the car or on a slot with two reflectors 16 ft. high when conditions were poorer. The operator was tracked down by the local police as a suspicious character, but luckily had his mobile licence with him. GB3VHF was heard on a vertical car aerial S3 to noise at Sutton-on-Sea, Lincs. GW2HIY has had a long delayed listener card giving a report of 55A from HA7003, Radio Club Szolnok at 19.37 G.M.T. on April 1, 1960. What a pity there was no transmitter at the other end. The distance is around 1,200 miles. GW3IGY is now active on 2m from Ty-Croes, Anglesey, after 23.00 most nights on about 145·3 Mc/s with 40 watts to a dipole.

G5MA (Gt. Bookham) was still at it in the latest opening, and on the evening of October 12 worked EI2A (S8/9 phone both ways), GI3FJA, GI3OFT, GI3ONT, and GM2FNF (Isle of Arran, Bute), " a nice new rare county." After coming home from the Manchester Convention, G5MA managed to get back on the band Sunday night and worked LX1SI at Luxembourg Airport.

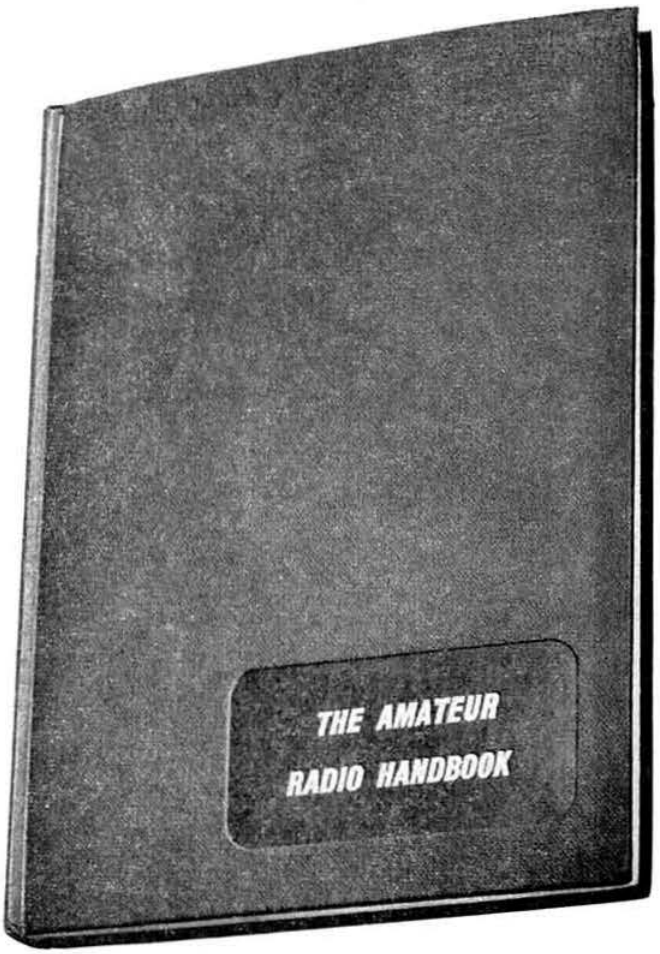
G3JGJ (Newton Abbot) has had quite a lot of activity with GW8UH (September 23), F9JY (September 1, 23 and 26) with many hearings of DX G stations as well as some QSOs. On October 12 a Nuvistor pre-amplifier was fitted, and on trying it out about midday the first station heard was ON4BZ on phone (55) calling CQ. No QSO resulted however. The same evening G3NBQ, G3BA, and G5DF were heard. The Nuvistor pre-amplifier is a great improvement and is recommended to anyone wanting improved performance. (See R.S.G.B. BULLETIN for March 1961 and V.h.f. Receivers chapter of *The Amateur Radio Handbook* when it is published.)

G6RH (Bexley) benefited by the opening of October 12 when GM stations were heard for the first time in years with GIs and EI coming through at the same time. On the 12th EI2A and GI3FJA worked; on the 13th GM3EGW, GM3GUI, GI3FJA and DM2ABK. On the 14th GM2FNF (Isle of Arran), GI3OFT, GD3UB, DM2ADJ and G3MTJ/M (Hereford), for a new county, were worked. On the 15th GW3LJP (Radnor), G3JYP (Westmorland) and G3BOC (Cheshire). During the opening other GM, GI, PAs, ONs, and F stations and LX1SI were heard. G6RH has now worked 16 countries and 61 counties.

G3OUT (South Woodford) recently carried out tests with G3OTN (Woodford Green) which are rather interesting. At the time G3OUT/A was at Mablethorpe, Lincs., and the tests were carried out at 13.00 daily. G3OTN's gear was 60 watts phone to a 6-over-6 90 ft. a.s.l. The receiver was a standard c.c. converter into a CR100. G3OUT/A had an input of 15 watts to a five element Yagi 12 ft. a.s.l. (c.w. only) with a 13 transistor receiver using 2N1742/2N1743 in r.f. and mixer stages respectively. The first results were very encouraging; G3OTN was heard RS45 with very deep but rapid QSB. G3OTN's c.w. was 459 with very deep and rapid fading. This happened all through the week and seems to prove that good aerials and gear will make midday QSOs possible over the 120 miles path in any conditions.

GW3MFY (Bridgend) worked G3IIW (Tunbridge Wells) on October 12. Earlier (October 5) when conditions seemed poor, G3JYP (Westmorland) was heard working G3EHY. F9RL (Fecamp) was worked (phone) on October 12 and ON4HC was called several times on the 13th (c.w.). F8MW (Vire, Normandy) was worked on the 14th as was DJ3ENA (Feldberg, 40 km. north of the Swiss border), a fine QSO at about 570 miles. This station was heard all through the evening and up till 09.30 on the 15th. GC2FZC was worked on the 15th and G3HWT (near Preston) was heard peaking to 57 during the late evening. GW3MFY says, apropos the rush to the l.f. end of the band during openings, that the offenders, particularly those on the eastern side of the country, should be condemned to a year's operation from South Wales. Many chances of South Wales operators working PA and ON were no doubt spoilt by Home Counties stations moving into South Wales zone, a most selfish attitude when one remembers that they are over a 100 miles nearer the DX. Surely ON or PA is no longer really DX to Home Counties stations? Please give the Welsh lads a chance. GW3MFY was heard by OE9IM on October 15. HB1KI worked 24 Gs during the opening.

GM3GUI (Friockheim) noticed that the pressure built up to 1025 mB plus on October 13 and watch was set on 2m at 18.30 G.M.T. on that date. There were immediate QSOs with G3BLP, G8VZ, G5LB, G6RH, G2XV and G3LTF with many others heard including a French station believed to be F2AU. GB3VHF was heard several times on the 14th, signals peaking to 589 with many more G stations heard, some on phone and most on c.w. GB3VHF persisted throughout that day until the night thereof. The beacon was still in evidence on the morning of the 15th but generally weaker, but G2XK was heard at 11.15 calling G3DDD/P. GM3GUI still thinks that not too many of the southern



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Editor: John A. Rouse (G2AHL)

CONTENTS

stations tune the top (GM) portion of the band. The repeated exhortation to tune the whole band is here repeated, because if one may believe some remarks (which are almost incredible today) many people still do not look up there. The consistency of GB3VHF also suggests that sometimes the general activity was not there, although of course some southern beams were probably pointed elsewhere.

A.1795 (Weymouth) is listening with a cascode converter and a five element array should soon be erected.

Isle of Man

GD3UB (Ramsey) is back on 2m (cheers!) on a frequency of 145·2 Mc/s. On the evenings of October 13 and 14, 58 stations were worked, the majority being in Kent, Essex and Bucks. Most signals were S9. Stations in EI, GI, GM, GW, F and DJ were heard, and much time was lost trying to unravel under-modulated phones with nice carriers. GD3UB says " Oh! if only those fellows had a key! " Finally G3CO is congratulated for his excellent phone signals, the best heard by GD3UB on any band for a long time. Look for the Isle of Man at 23.00 most nights.

Northern Ireland

GI3OFT (Belfast), after noting relatively poor conditions for many weeks, says that the excellent tropospheric opening lasting from October 11 to October 15 brought in very good signals from the South and South-East. The report also includes the " Hard Luck Story of the Month " as follows: On October 12, GI3FJA (Co. Down) heard F8MW calling EI2A (Co. Meath), following a CQ. As EI2A went back to a G call, GI3FJA gave F8MW a long call. Getting no reply from this, one of the many G stations calling was worked. Several minutes later GI3OFT and G3JYP heard F8MW frantically trying to raise GI3FJA—the whims of 2m QSB can be very frustrating! However, consolation came the following evening when GI3FJA worked GC2FZC for a new country. Later ON4HC was heard by several GIs (S8) but could not be raised. On the 15th GI3OFT heard and called SM5II (or IS) several times at about S4 around 00.50. Consistently strong signals were heard on several nights from G3BSU, G2JF, G6RH, G3CO, G3BLP, G3MCS, G6GP, G3FZL, G3HBW, G3KEQ, G3HRH, G5MA, G6XX and G6YP. G5ZT (Plymouth) was worked 58 by GI3FJA. GI3OFT himself had the good fortune to contact, arrange skeds, and hear reports exchanged, between G3CCH (Scunthorpe) and GM2FNF (Isle of Arran) all in 6½ minutes! A point of interest in the opening was that GB3VHF—only heard once before, probably, in Northern Ireland—was audible, S8/9 continuously from early evening on the 11th until the morning of the 15th. A new station now active from Co. Armagh is GI3ILV, in addition to GI3ONF, who has been piling up many new counties worked. In Belfast GI3LLQ (Queens University Radio Club) is now active on 2m. On September 30, GI3ONF was the only GI to work GM stations in the only aurora observed there for months. Signals were mostly S6/7A.

Grand Opening on 70 cm

G3LTF worked DJ3ENA (Feldberg, near the Swiss border) at 599 both ways on October 14 and also heard his 70cm phone played back on 2m! On the 15th a fine QSO (58/59) was made with SM6ANR; another was with SM7BAE 549 for his first G station on 70cm. This was at 08.00 G.M.T. SM6ANR was worked again at 579 peaking S9 and lastly DL6EZA (Rottweil, near Swiss Border) at 589, also on phone. DJ3ENA, who was looking for G3LTF, heard several G stations who appeared unaware that 70cm was wide open! It was however not so wide open as 2m, but it was very good to the mentioned directions and the signals were only about 2-3 S points below those on 2m.

HB9RG informed G2AIW at the Turin Conference, the following QSOs were made on October 10: DJ3ENA/OK1EH, DJ3ENA/DM2ADJ, DL1LS/OK1EH, DL1LS/HB9RG and on the 11th DJ4AU/P/HB9RG. The good work is proceeding apace over there too. On September 23, SM5MN reports, SM7AED, SM7BAE, and SM7BE worked OK1VR/P at a distance believed to exceed the 1,000 km. mark.

GI3OFT (Belfast) who has a considerable interest in 70cm (but no activity) finds that GI3ONF and EI2A are working hard to establish a first GI/EI QSO. If other stations in GI and Northern England would indicate 70cm interest it is felt that a first G/GI QSO could shortly result. As far as Northern Ireland stations are aware, there is no G activity North of Manchester.

Four Metres

Neither GI3OFT nor GI3HXV has yet managed to work 4m out of Northern Ireland although several signals are heard most Sunday mornings. There appears no record of any GI ever working out of the country on this band. Who will be the first G or GM operator to notch yet another first? GI3HXV is active almost every night from 23.30 to 24.00, and on Sunday mornings.

Six Metres

According to *QST* for August there was an important opening via " a form of long distance auroral propagation only recently discovered," on the night of July 4, when VE8BY (Yellowknife, North-West Territory, Canada) worked scores of W1s, 2s, 3s, VE2s, and VE3s on phone and c.w. beginning at about 03.00 G.M.T. When W1HDQ gave up (at 06.30) VE8BY was knocking off W8s.

Lunch Time Club Meetings on Two

During one recent lunch time no fewer than four different club stations in the London area belonging to large industrial firms happened to be on 2m simultaneously and (quite fortuitously), most of the operators managed to work the rest before all had to dash back to their desks or benches.

The occasion suggested to G5UM that it might be a good idea to organize such lunch time meetings on a regular basis, say once or twice a week. Such meetings would *have* to be weekday ones, at times when operators would have access to the club transmitters at their place of work during lunch times.

Among " commercial " club stations known to be active on v.h.f. in the Greater London area are G3AYC (B.B.C. Ariel Club), G3GEC (self-evident), G3GKM (Babcock and Wilcox Radio Association), G3OFR (G.E.C. Valve Works at Hammersmith), G5FK (G.E.C. Research Centre in north-west London) and G8LM (Murphy Radio Sports Clubs Radio Club), to name only six.

It is suggested that the half hour between 1.25 and 1.55 p.m. on Wednesday and Friday might be a convenient time for a get-together for most members (if it is not, perhaps operators would like to suggest alternatives).

It is expected that at such lunch time sessions valuable indoctrination would occur to non-transmitting members who customarily sit in at transmitting sessions. G5UM adds that on some days there are as many as half a dozen interested spectators at the daily G8LM lunch time sessions on 2.

More news of the activities of the Mid. Herts. net—probably one of the first v.h.f. nets to be established in the country—has come to hand from G5UM who reminds us that it was as long ago as 1955 that the net first began operations with a dozen Whitaker crystals specially purchased to put the Mid. Herts. net well out of the way of the QRM from the London area. This was several years before the present British Isles Band Plan was adopted by the R.S.G.B.

As soon as the Band Plan *was* officially agreed steps were taken to remove the net to the appropriate Greater London zone and another flock of crystals was purchased at quite considerable expense to place members on 145·09 Mc/s—as far away as possible from the mid-band QRM (more important) in the exclusive part of the band.

Mid. Herts. members are especially grateful to G3IRW for the services he has rendered them in providing further crystals coming out on 145·09 Mc/s by etching them by the ammonium bifluoride technique. Several members have provided him with sundry otherwise useless crystals fairly near the 8 Mc/s band and these he has adapted to 8061 kc/s in his acid bath. G3IRW has brought the technique to a fine art: during the last stages of etching he times the process on his stop watch, allowing 30 seconds to remove a kilocycle.

Finally, G5UM wonders how many other nets are in operation around the country on spot frequencies. Few, if any, have yet " registered " the details with G2AIW.

European V.H.F Contest, 1960

The following are the principal results (as they concern United Kingdom amateurs) of the European V.H.F. Contest held in September 1960 and organized by the Yugoslav National Society S.R.J.

Sect. 1	Fixed 2m
I1AHO	In Memoriam
	Points
1. I1SVS	18284
2. DM2ADJ	16270
3. I1CZE	15012
7. G3LTF	13861
11. G3JWQ	11053
20. G3HBW	9168
G3LEV	4468
GM3LDU	2150

Sect. 3	Fixed 70cm Points
1. DJ3ENA	1681
2. OK1KKD	1614
3. DL3SPA	1508

Sect. 5	Fixed 24cm Points
1. DJ3ENA	339

Sect. 7	Fixed 12cm Points
1. DJ1CK	3

Sect. 2	Portable 2m Points
1. YU3APR/P	28120
2. OE2JG/P	25129
3. DL6TU/P	24776
12. GW3KMT/P	17929
30. G3LCH/P	13219
G3HGE/P	9828
G3LAR/P	2474

Sect. 4	Portable 70cm Points
1. OK1SO/P	2005
2. OK1KTV/P	1947
3. DM3VML/P	1764

Sect. 6	Portable 24cm Points
1. DL6GU/P	528
2. HB1RG/P	411
3. OK1KAD/P	203

Sect. 8	Portable 12cm Points
1. OK1KAD/P	70
2. OK1KEP/P	70
3. DJ3JP/P	3

The place of honour " In Memoriam " was given to I1AHO who was unfortunately killed during the contest, through his station being struck by lightning.

Random Notes

DX listener and station reports of reception of GB3VHF (informative ones, please) would be greatly appreciated. Please send them to the V.H.F. Committee at R.S.G.B. Headquarters.

The Month on the Air (Continued from page 222)

The **21 Mc/s** band has at times been very good and yet on other days has been almost dead, except for local signals. Unfortunately the Pacific area has been workable only on isolated occasions, and then generally only the nearer island groups such as KG6 and KR6. **GW3AHN** records s.s.b. QSOs with CX2CO, FP8BV, HC2ND, KP4BAH, VP5BH, VS9KPH, YV1EM, 9G1DP and ZB1A, and is now up to the excellent total of 272 on this band, using only 25 watts input on c.w. and a maximum of 100 watts p.e.p. on s.s.b., which proves that it is not necessary to use a kilowatt to work DX. On c.w. **G3AAE** QSO'd VQ8BC (15.08) and 5R8CQ (16.15), whilst a.m. accounted for DU1EH (14.28), LA2DE/P (Spitzbergen, 12.05, 21,200) and XW8AL (14.20). **G2FFO** mentions KX6DB (11.15), FP8BV (18.00), VP5BH (18.11) and XE1AX (20.00), which latter country was worked on s.s.b. by G8KS, in the shape of XE1ZM (13.25, 21,405). **ZC4CT** has been comparatively inactive and records contacts with G3NAC/VS9K (08.00), MP4BBE (16.03), VK5NO (13.05) and ZP5OG (18.00). ZC4CT is one of the operators of the club station ZC4PC, which is now active on s.s.b. and will no doubt be in much demand. From Africa 5U7AC continues to put in a good signal in the late afternoons and early evenings on frequencies between 21,040 and 21,090. 7G1A is also sporadically active on c.w.

Although **28 Mc/s** has not produced any exotic DX it is nevertheless well worth watching, and openings to VU, JA and VK have been noted, in addition to signals appearing from shorter distances on the South and South-Easterly paths. The Kamaran Islands DXpedition were at one period making one-a-minute QSOs on this band with European stations. Other DX worked includes ZB2JA (09.30), ZD7SE (16.05), ZD6RM (13.00) and ZS7L (16.30). Predictions for this band forecast good openings during the next two months, and this will probably be the last winter of the present sunspot cycle during which there will be worth-while DX on this band.

* * *

Correspondents are thanked for their letters and reports, and acknowledgements are made to the *DX'press* (PA0FX), the *West Gulf DX Club Bulletin* and *DX* (W4KVX), who, between them, report on practically every aspect of DX working.

News items and notes on band conditions and unusual activity will be welcomed and should be sent to arrive at R.S.G.B. Headquarters not later than **November 20.**

CONTESTS DIARY

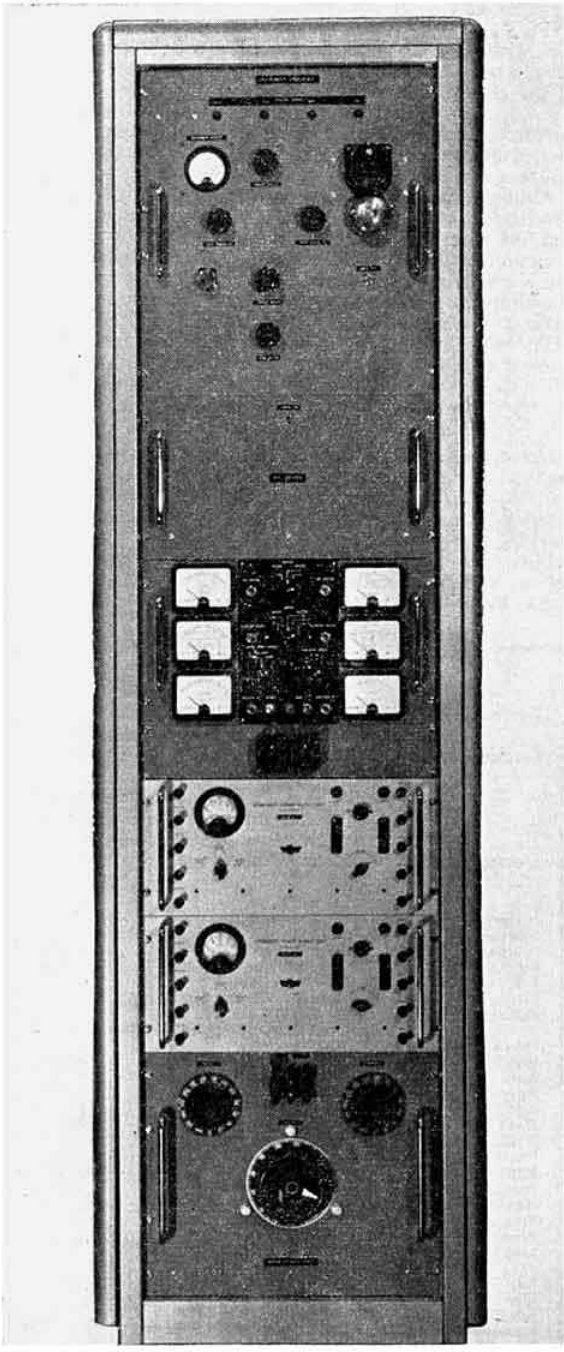
1961

November 25–27 CQ WW DX (c.w.) (For details see page 177, October 1961)
December 2–3 - R.S.G.B. 21/28 Mc/s Telephony Contest
R.S.G.B. 21/28 Mc/s Telephony Receiving Contest. (For rules see page 180, October 1961)
December 3 - OK DX Contest

1962

January 28	–	144 Mc/s C.W. Contest
February 2-4	–	A.R.R.L. DX Contest (Telephony)
February 3–4	–	Affiliated Societies' Contest
February 16-18	–	A.R.R.L. DX Contest (c.w.)
February 24–25	–	First 1·8 Mc/s Contest
March 2-4	–	A.R.R.L. DX Contest (Telephony)
March 3–4	–	144 Mc/s Open Contest
		Listeners' V.H.F. Receiving Contest
March 10–11	–	B.E.R.U. Contests
March 16-18	–	A.R.R.L. DX Contest (c.w.)
April 7–8	–	Low Power Contest
April 15	–	D/F Qualifying Event
April 28-29	–	V.E.R.O.N. PACC (Telephony)
April 29	–	First 420 Mc/s Contest
April 29	–	D/F Qualifying Event
May 5-6	–	V.E.R.O.N. PACC (c.w.)
May 6	–	First 144 Mc/s Field Day *
May 13	–	D/F Qualifying Event
May 27	–	D/F Qualifying Event
June 2–3	–	National Field Day
June 16–17	–	70 Mc/s Contest
June 24	–	D/F Qualifying Event
		1250 Mc/s Tests
July 7–8	–	Second 420 Mc/s Contest *
July 15	–	D/F Qualifying Event
July 22	–	Second 144 Mc/s Field Day
September 1–2	–	Region 1 I.A.R.U. V.H.F. Contest
September 9	–	D/F National Final
September 16	–	Low Power Field Day
October 7	–	R.A.E.N. Rally
October 27-28	–	R.S.G.B. 7 Mc/s DX Contest
November 10-11	–	Second 1·8 Mc/s Contest
December 1–2	–	R.S.G.B. 21/28 Mc/s Telephony Contests

**To coincide with I.A.R.U. Region 1 V.H.F. Contest dates.*



The GB3GEC transmitter which delivers 400 watts output on 431·5 Mc/s from two 4X250B valves. The r.f. power amplifier occupies the large panel at the top in this picture with the driver stages immediately below. The two lighter coloured panels are the stabilized power supplies. At the bottom of the cabinet are the main power supplies with Variac controls.
(Photo by courtesy of M-O Valve Co. Ltd.)

GB3GEC— A New U.H.F. Beacon Project

BY G. M. C. STONE (G3FZL) *

IN the August 1961 issue of the R.S.G.B. BULLETIN, V.H.F. Beacon Project GB3VHF was described. Its basic purpose is to investigate propagation on a frequency of 144·5 Mc/s over an 86 mile path from Wrotham, Kent, to Northampton. The work is in support of the United Kingdom C.C.I.R. Study Group V programme to provide data for the ultimate benefit of all users of the v.h.f. bands.

Many problems confront Study Group V and a number of investigations are being carried out at present, particularly in the frequency bands 50-100, 170-200 and 600-650 Mc/s. Increasing emphasis is being placed on investigations in television Bands IV and V (470-585 Mc/s and 610-960 Mc/s), as it is on these frequencies that future developments in television broadcasting will take place. A basic fact that has to be determined is how far apart two stations operating on the same nominal frequency can be located, so that mutual interference is only caused for some fractional period of time —say 0·1 per cent. Investigations carried out by the B.B.C. and G.P.O. on frequencies around 600 Mc/s during the period June 1959 to June 1960 in conjunction with authorities in Western Europe indicate that for 1 per cent of the total time field strengths within 10-20db of the free space value are encountered at ranges up to and beyond 1000 km. Such field strengths would cause unacceptable interference between two television stations, one located, say, in East Anglia and the other in Holland. This phenomenon is well known to amateurs operating in the 70cm band, and was especially evident during the summer of 1959, when contacts were frequently made with amateurs located in Holland, Belgium and Western Germany over the North Sea path.

As a result of these findings, activity has been intensified to collect further data. Through its representation on the C.C.I.R. Study Group V, the R.S.G.B. has been able to arrange and co-ordinate a further experiment to provide data on propagation over the North Sea in the 430 Mc/s band. The M-O. Valve Co. Ltd., located at Hammersmith, S.W. London, a subsidiary of The General Electric Company, offered to make available as a signal source a high powered life test transmitter for 4X250B type valves. This transmitter has a nominal output of 400 watts, covers the frequency band 427 to 438 Mc/s and is capable of operating continuously 24 hours per day at this rating. At present the power is dissipated in a dummy load but shortly, when the experiment to be described commences, the power will be fed to a suitable aerial array located on the roof of the factory at Hammersmith.

Two basic problems had to be solved. Firstly, permission had to be obtained from the G.P.O. to operate such a transmitter in the 430 Mc/s band and a suitable frequency had to be selected. Second, a suitably equipped receiving station had to be found in Holland. In the latter connection, the Dutch Government Station PE1PL, well-known for its operation with amateurs in the 70cm band, immediately came to mind. An official approach was therefore made to the Director of the Physics Laboratory of the National Defence

* *Chairman, Scientific Studies Committee, 10 Liphook Crescent, Forest Hill, London, S.E.23.*

Research Organization at The Hague, putting forward proposals. The Director proved to be enthusiastic about the project and offered full co-operation. Having established suitable transmitting and receiving terminals, a letter was sent to the G.P.O. enquiring whether they would be able to grant permission for the experiment. Following lengthy negotiations with Service users of the 70cm band (available to United Kingdom amateurs on a shared basis), permission was given for a transmitter to operate on a frequency of 431·5 Mc/s, with an effective radiated power from the aerial not greater than 5 kW. This permission was given in September 1961 and arrangements are now being made to make the transmitting and receiving stations operational. For the transmitter an aerial array consisting of four 8-over-8 slot fed Yagis mounted in an X configuration is being supplied by J-Beam Aerials Ltd. This will have a beamwidth of about 15° and will be directed towards The Hague.

The Transmitter

The transmitter, a block diagram of which is shown in Fig. 1, consists of three distinct assemblies; the power units,

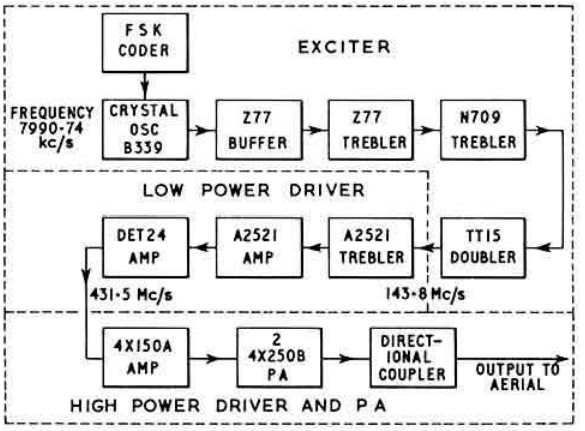


Fig. 1. Block diagram of the M-O Valve Co. transmitter, which is to be used for the GB3GEC propagation experiment.

the exciter and low power drive and the high power drive and p.a. The power units associated with the high power drive and p.a. anode circuits are conventional bi-phase rectifier units with capacity input filters. The supplies to the rest of the equipment are fully stabilized. The exciter is a conventional crystal multiplier unit with an associated coder employing frequency shift keying (f.s.k.), for call-sign identification. A crystal oven is employed in the exciter to ensure stability and the crystal frequency is 7990·74 kc/s. The output stage of the exciter consists of a push-push doubler at a frequency of 143·8 Mc/s, with an output of approximately 3 watts. This is fed into the low power drive unit, which consists of an A.2521 trebler driving an A.2521 intermediate amplifier, followed by a DET24 grounded grid output stage, which gives 11 watts r.f. output at 431·5 Mc/s. The high power driver is a 4X150A with a half-wave slab-type anode line capable of delivering about 75 watts output, which is used to drive the two 4X250B p.a. valves, to give an output of about 400 watts maximum. A directional coupler is incorporated in the output feeder for monitoring purposes.

Receiving Arrangements

At the receiving end at The Hague it is proposed to use either a 25 ft. diameter parabola, or a dipole array having a gain of approximately 20db. The receiver has a parametric amplifier feeding into a crystal controlled converter, which changes the 431·5 Mc/s signal down to 140 Mc/s. At 140 Mc/s a tunable receiver with motor driven automatic frequency control is employed. The reason for using the high gain aerial arrays at each end, the high power transmitter at Hammersmith and the very sensitive receiver at The Hague is to ensure that a usable signal is present for as high a percentage of the total time as possible, so that useful statistical information may be extracted from the signal records taken at The Hague.

It is hoped that the transmitter will be on the air by the end of November and at present operation is planned and authorized to continue until the end of December 1962. The transmission will be a continuous carrier with identification by the Morse characters GB3GEC every five minutes. Amateurs with suitable receivers will, of course, be able to tune in to the transmission and it can be used, as GB3VHF is used, to assess tropospheric propagation conditions and to adjust and compare receiver performance. However, the coverage will be much less than that of GB3VHF, except in the direction of Holland, owing to the very sharp beam of the transmitter aerial array. It is appreciated that the frequency is outside the internationally agreed DX portion of the 70cm band (432-434 Mc/s), but is sufficiently close for those who wish to make use of the transmission. As soon as the transmitter is fully operational an announcement will be made in the R.S.G.B. News Bulletin transmission and also in the *Four Metres and Down* feature of the R.S.G.B. BULLETIN.

Institution of Electrical Engineers Faraday Lecture 1961/62

"EXPANDING Horizons in Communications" is the title of the I.E.E. Faraday Lecture for 1961/2 which will be delivered at twelve centres throughout the British Isles by Mr. D. A. Barron, M.Sc., M.I.E.E. (Deputy Engineer in Chief, G.P.O.). The lecture will be heard first at Bristol (Colston Hall) on November 21, 1961, while the Central Hall, Westminster, will be the venue when the lecture is delivered in London on February 14, 1962. Other centres include Cardiff, Birmingham, Liverpool, Belfast and Glasgow. Further information can be obtained from the Secretary, I.E.E., Savoy Place, London, W.C.2.

Recording Studios Visit

FROM November 24-26, 1961, the Universal Programmes Corporation Ltd. will be holding its third annual "At Home." On this occasion, new ground will be broken by recording a live group on three track equipment and then allowing selected members of the audience to follow the processes through editing, dubbing, reduction to two track and monaural and finally to master cutting.

Admission will be by ticket only, obtainable by sending a stamped addressed envelope to the Corporation's Manager, Mr. Allen E. Stagg, at 35 Portland Place, London, W.1.

R.S.G.B V.H.F. BEACON STATION GB3VHF

The frequency of the Society's v.h.f. beacon transmitter at Wrotham Hill, Kent, when measured by the B.B.C. Frequency Checking Station, was as follows (nominal frequency 144.50 Mc/s)

Date	Time	Error
October 3, 1961	12.50 G.M.T.	630 c/s low
October 10, 1961	13.37 G.M.T.	360 c/s low
October 17, 1961	11.00 G.M.T.	76 c/s low
October 24, 1961	11.30 G.M.T.	75 c/s high
October 31, 1961	12.06 G.M.T.	310 c/s high

The station is in operation from 06.30-23.59 B.S.T. daily but may be on for the full 24 hours for test purposes from time to time.

R.S.G.B.
International Radio Hobbies Exhibition

Royal Horticultural Society's Old Hall, Vincent Square, London, S.W.1
Wednesday, November 22, 1961 to Saturday, November 25, 1961

LIST OF EXHIBITORS

Radio Society of Great Britain
Amateur Radio Mobile Society
Associated Iliffe Press Ltd. (*Wireless World* and *Electronic Technology*).
Avo Ltd.
Bernards (Publishers) Ltd.
British Amateur Television Club
Copp Communications Co.
Daystrom Ltd. (Heathkit)
Dartronic Ltd.
Electroniques (Felixstowe) Ltd.
Enthoven Solders Ltd.
Headquarters Station of the R.S.G.B. (GB3RS)
K. W. Electronics Ltd.
Minimitter Co. Ltd.
M-O Valve Co. Ltd.
E. J. Philpott's Metalworks Ltd.
Post Office Engineering Dept., Research Branch
Radar and Electronics Association
Radiostructor
Royal Air Force
Royal Naval Reserve
Selray Book Co.
Short Wave Magazine Ltd.
Sound Vision Service (Electrical)
Webb's Radio
T. Withers (Electronics)
V.H.F./U.H.F. Group
65th Signal Regiment, R. Signals, Territorial Army

ADVANCE information provided by some of the exhibitors at this year's R.S.G.B. Radio Hobbies Exhibition to be held in London from November 22-25 indicates that the show will be as full of interest as ever.

Making a welcome return will be the G.P.O. Engineering Research Station, Dollis Hill, London, on whose stand will be displayed equipment indicating the range of research work undertaken. Examples are transistor amplifiers, TV interference filters, s.s.b. crystal filters, frequency standards, waveguides and a prototype of a new speaking clock. Officers will be available to answer questions on licensing matters and interference problems.

On the R.A.F. stand members of the R.A.F. Amateur Radio Society who took part in the recent DXpedition to Kamaran Island will be showing some of the equipment they used. The Royal Naval Amateur Radio Society will be represented on the Royal Naval Reserve stand on which there will be a display of equipment used by members of Communications Branch of the Reserve. The Territorial Army will be represented by the 65th Signal Regiment, Royal Signals.

The R.S.G.B. stands will be devoted to displays of Home Constructed equipment, the Exhibition Station GB3RS and R.S.G.B. publications, including the new *Amateur Radio Handbook*. The V.H.F./U.H.F. Group will exhibit a wide variety of amateur v.h.f. and u.h.f. gear.

Colour television is to be demonstrated by the British Amateur Television Club while the Amateur Radio Mobile Society will again have a display for the mobile enthusiast.

The M-O Valve Co. Ltd. is devoting much of its stand to amateur radio astronomy equipment built by G3LRH. The measurement of the noise factor of receivers for 70, 144 and 435 Mc/s will be demonstrated by G3HBW. Measurements can be made on visitors' receivers for these bands.

The increasing interest in single sideband will be catered for by a number of manufacturers. Several firms will be showing s.s.b. adaptors; Daystrom will introduce the Heathkit SB10U, K. W. Electronics a design based on the K. W. Viceroy, Minimitter the SB7M and Copp Communications an exciter using the McCoy s.s.b. filter and R.C.A. 7360 beam deflection valve.

New receivers which are likely to be studied closely are the new K. W. Electronics receiver, the Drake and the Mosley, all of which have crystal controlled front-ends (exhibited by K. W. Electronics), and the Eddystone 840C, to be shown by Webbs' Radio. Webbs will also be showing the Eddystone 770 range of v.h.f./u.h.f. receivers and the Model 880 30 band high stability receiver. T. Withers (Electronics) will be exhibiting for the first time a transistorized mobile receiver for 1·8 and 144 Mc/s as well as 144 Mc/s converters and pre-amplifiers using Nuvistors.

Coils of all types, including types suitable for the G2DAF receiver, will be displayed by Electroniques (Felixstowe) Ltd. Cabinets and chassis in many sizes and shapes, including a new range based on the popular "S" line style, will be shown by E. J. Philpott's Metalworks. Enthoven Solders will again be demonstrating the Superspeed soldering iron, one of which will be given away each day.

Avo will be exhibiting the Mk 4 Valve Characteristic Tester, a Transistor Analyser and the Avometer Model 9SX while Dartronic will introduce a high-performance 3 in. oscilloscope.

Aerials and masts will be exhibited by several firms. Minimitter will be showing a new multiband aerial and an add-on unit for the G4ZU Minibeam, the X20. Sound Vision Service will be featuring a 45 ft. telescopic portable mast with a rotary head. K. W. Electronics will exhibit C.D.R. rotators, s.w.r. indicators and Dow-hey co-axial relays.

Annual Report of the Council

THE Report which follows deals with the activities of the Society during the year ended June 30, 1961, and refers to the more important events and happenings that occurred during that period.

A Supplementary Report covering the period from July 1, 1960, to the early part of December, 1960, was submitted to the Annual General Meeting of the Society held on December 16, 1960. The Supplementary Report was published in the January 1961 issue of the R.S.G.B. BULLETIN.

Membership

The Council is pleased to report that for the fifth year in succession an increase in membership can be recorded. The net gain amounted to 608 compared with a net gain of 496 last year and a net gain of 445 during the previous year. At June 30, 1961, the total membership was 10,644 compared with 10,036 a year earlier.

The following table compares the number of members in each grade over the past three years.

Grade	June 30 1959	June 30 1960	June 30 1961	Gain over previous year
Corporate members:				
Licensed	6349	6473	6686	213
Not Licensed ..	2592	2756	2942	186
Associates	599	807	1016	209
	9540	10036	10644	608

As in former years an analysis has been made to ascertain the number of members who were licensed to operate an amateur transmitting station. The analysis shows that at June 30, 1961, 62·5 per cent of all Corporate members held a transmitting licence compared with 64 per cent a year earlier.

Details of the current analysis, compared with those of the two previous years, follows:—

Grade	June 30 1959	June 30 1960	June 30 1961
Corporate Members: (Licensed) ..			
Country	3840	3963	4145
London*	1266	1325	1413
Overseas	1243	1185	1128
	6349	6473	6686
Corporate Members: (not Licensed)			
Country	1645	1766	1883
London*	747	793	833
Overseas	200	197	226
	2592	2756	2942
Associates	599	807	1016
TOTALS	9540	10036	10644

* For the purpose of this Report, London members are those who live within a radius of 25 miles of Charing Cross. For convenience the whole of the County of Surrey is also included in the London Region.

There has again been a satisfactory increase in all grades of membership except that for the second year in succession the number of overseas licensed members has fallen—this year by 57 compared with 58 last year. The Associate grade has again increased—this time by 209. The question of increasing the Associate subscription rate from 15s. to a more realistic figure is still under consideration.

Affiliated Societies and Clubs

At June 30, 1961, the number of societies and clubs affiliated to the R.S.G.B. was 157 compared with 144 a year earlier.

During the year the Council agreed to allow those affiliated societies and clubs, which at present subscribe for one copy of the R.S.G.B. journal at the reduced rate of 10s. 6d. per annum, to subscribe for a second copy at a special rate of 12s. 6d. per annum.

The Council regrets that very few societies and clubs took advantage during the year of appointing Affiliated Society Representatives. The reason for the lack of interest in this facility appears to arise from the fact that affiliated societies and clubs may now take part in the National Field Day event without any restriction.

Licences

The Radio Services Dept. of the General Post Office informed the Society early in July that as at June 30, 1961, a total of 10,154 persons held an Amateur (Sound) Licence and of this number 1,043 held also an Amateur (Mobile) Licence. In addition 83 Amateur (Television) Licences were current.

A comparison between the position at the end of June 1960 and at the end of June 1961 follows:

	June 30 1960	June 30 1961
Amateur (Sound) Licences	8729	9111
Amateur (Sound) and Amateur (Sound Mobile) Licences	889	1043
Amateur (Television) Licences ..	79	83
TOTALS	9697	10237

As at June 30, 1961, approximately 54 per cent of all United Kingdom licence holders were members of the R.S.G.B., a similar percentage to that recorded a year earlier.

R.S.G.B. Bulletin

Volume 36 of the Society's journal ran to 592 pages, compared with the 572 pages which went to make up Volume 35. Fortunately the production of all 12 issues proceeded smoothly with no trade dispute to hold up delivery.

An increase of interest in the single sideband method of transmission was catered for by a number of excellent articles contributed by Mr. G. R. B. Thornley (G2DAF). Under the title *Communication Receiver Design Considerations*, Mr. Thornley, in a series of five articles, paved the way for two important constructional articles which described his own receiver.

The technical standard of the R.S.G.B. BULLETIN remained consistently high throughout the year, but increased production costs and postage charges prevented the Council from authorizing any material increase in size. Revenue from advertising was £490 higher than in the previous year, due to the decision to increase advertising rates as from July, 1960.

The Council records its thanks to all who contributed to Volume 36 of the R.S.G.B. BULLETIN and in particular thanks the regular monthly contributors, Mr. F. G. Lambeth, G2AIW (*Four Metres and Down*); Mr. R. F. Stevens, G2BVN (*The Month on the Air*); and Mr. G. R. B. Thornley, G2DAF (*Single Sideband*). Mr. J. P. Hawker (G3VA), contributed a much appreciated bi-monthly feature, *Technical Topics*, which obtained the highest number of marks in a form of Gallup-Poll, conducted by the Editorial staff during the year to assess the popularity or otherwise of various features.

National Convention

The fourth post-war National Convention took place in Cambridge during September, 1960, when a highly diverse programme was offered by the Convention Committee, headed by Mr. T. A. T. Davies, G2ALL (Chairman and Region 5 Representative). To the great disappointment of the Council and the Committee, support for this important event fell much below expectations, in fact the attendance was at least 100 less than anticipated, with the result that a substantial loss was incurred on the event.

The Council records its thanks to the members of the Convention Committee and their ladies for their splendid efforts and to those members who attended.

However, in view of the lack of support the Council feels that very great care will have to be given to any further suggestion that the Society should organize another Convention.

Exhibitions

The Society was again represented at the National Radio and Television Show at Earls Court in August, 1960. During the period of the Show many new members were enrolled and a great number of publications were sold.

Attendances at the R.S.G.B. Radio Hobbies Exhibition held in the Old Hall of the Royal Horticultural Society, London, during November, were about the same as in 1959. The Exhibition was opened by Mr. Brian Rix who, besides being well known as an actor-manager, is the holder of an amateur transmitting licence.

The Council records its thanks to the Exhibition Committee, (Chairman, Mr. C. H. L. Edwards, G8TL), for organizing the Society's stands and to those members who volunteered for stand duty. Mr. F. F. Ruth (G2BRH) again performed the duties of stand manager at both exhibitions with great effectiveness.

Licence Matters

As the outcome of discussions between the Society and the Radio Services Dept., the G.P.O. agreed that United Kingdom amateurs may vary the prefix letter of their call-signs during alternative address and mobile operation to indicate the country or place in which the station is being operated. Thus a very confusing state of affairs was ended.

On May 1, 1961, the Frequency Allocation Table, adopted at the Geneva Radio Conference in 1959, came into force. In the United Kingdom the only material change affecting the Amateur Service concerned the 7 Mc/s band, which was reduced by 50 kc/s to give a band width of 100 kc/s, (7000-7100 kc/s). In Region I generally (Europe and Africa), the 420 Mc/s band was reduced to give a band-width of 10 Mc/s (430-440 Mc/s), but in the United Kingdom the amateur allocation became 420-450 Mc/s. The 28 Mc/s band came into line with the Atlantic City and Geneva Frequency Tables (28-29·7 Mc/s).

During the year the G.P.O. authorized a limited number of amateurs to transmit, for an experimental period of one year, narrow band images on frequencies in the 28 and 144 Mc/s bands. The facility granted last year to carry out tests with radio teleprinting equipment was continued during the year under review. Interest in this type of communication is increasing and to meet the need a series of articles on the subject is being contributed to the Society's journal by the Honorary Secretary of the British Amateur Teleprinting Group (Dr. A. C. Gee, G2UK), which Group is now affiliated to the R.S.G.B.

Unlicensed Operation

During the year the G.P.O. sent to the Society details of nearly two dozen successful prosecutions against persons found guilty of operating amateur transmitting equipment without a licence. It is of significance that in recent months penalties have gradually increased and that in most cases apparatus has been confiscated. The operator of one unlicensed station, who had interfered with the Society's News Bulletin service, was fined a total of £85, whilst several other offenders were fined amounts up to £50.

An impersonation case concerning the Radio Amateurs' Examination, led to fines totalling £75.

The Radio Amateurs' Examination

Two examinations took place during the year; the first in October 1960 (conducted by the G.P.O.) resulted in success for 182 out of 274 candidates. In the May 1961 examination (conducted by the City & Guilds of London Institute) there were 866 successful candidates out of the 1,251 who took the paper.

The Council records its thanks to those members who devoted their time and resources to coaching members for the examinations.

Slow Morse Transmissions

The Council also wishes to record its thanks to the many members who, week in, week out, have voluntarily transmitted slow Morse exercises for those who aspire to obtain an Amateur (Sound) Licence.

Frequency Advisory Committee

The Society's Penultimate Past President (Dr. R. L. Smith-Rose, C.B.E.) is now Chairman of this important committee. The Society is represented on the committee by the General Secretary, who, on several occasions during the year, drew the attention of the committee to the difficult problem of intruders in exclusive amateur bands.

Intruder Watch

The Council records its thanks to the Honorary Organizer of the R.S.G.B. Intruder Watch (Major Dennis Haylock, G3ADZ) and his colleagues for their services not only to the Society, but indirectly to amateurs and amateur organizations throughout the world. Regular reports of persistent intruders —to a total of about 300—have been passed on to the G.P.O. for action. Whilst results have not been spectacular it is a fact that a number of intruders moved frequency shortly after the Intruder Watch submitted a report.

R.S.G.B. News Bulletin Service

To meet the wishes of members resident in the north and east of Scotland, the Council decided to extend the R.S.G.B. News Bulletin Service by inviting members in the Aberdeen area to join the team of news readers. It is believed that the service, which during the past two years has been extended to cover a number of new areas of the British Isles, is much appreciated by members generally.

The Council wishes to place on record its thanks to all those who have acted as news readers.

Publications

Two new Society publications appeared during the year. The first, *Service Valve Equivalents* (compiled by Mr. G. C. Fox, G3AEX), is a completely new edition of a booklet issued free to members just after the 1939-45 war. The second, *The Radio Amateurs' Examination Manual*, is designed to help those who aspire to obtain a transmitting licence. The manuscript was prepared by Mr. B. W. F. Mainprise, B.Sc., A.M.I.E.E., (G5MP), to whom the Council records its warm thanks. Mr. S. Iles (G3BWQ) is also thanked for reading the manuscript and assisting with the proofs.

The General Secretary and Miss Gadsden were responsible for producing the 1961 edition of the *R.S.G.B. Amateur Radio Call Book*, which for the first time included a list of affiliated societies.

Margaret Mills (G3ACC) provided some useful new material for her invaluable little booklet, *The Morse Code for*

the Radio Amateur, with the result that it became possible to publish a revised edition during the year.

Revenue from the sale of Society publications has been very satisfactory.

The Amateur Radio Handbook

After very many setbacks the Council decided in January, 1961, to invite the Deputy Editor of the R.S.G.B. BULLETIN (Mr. John A. Rouse, G2AHL) to take over the editorship of *The Amateur Radio Handbook*. During the months up to the end of June 1961, great progress was made and it is now hoped that this most important of all Society publications will appear in time for it to be sold at the Radio Hobbies Exhibition in November 1961.

The Council records its thanks to all who have co-operated with Mr. Rouse in the work of preparing the *Handbook* for publication.

Scheme of Representation

The Council records its thanks to all Society Representatives and especially to those who were responsible for organizing Official Regional Meetings, and other special events in their region, county or town.

Official Regional Meetings were held in Weymouth (October 2, 1960—Region 9), Blackpool (April 23, 1961—Region 1), Trentham Gardens (April 30, 1961—Region 3) and Edinburgh (May 13—Region 13).

Mobile Rallies

During the year a number of highly successful mobile rallies were organized by R.S.G.B. groups and affiliated societies. At some of these rallies attendances well in excess of 1,000 were recorded—further proof of the popularity of events which enable members to share their radio pleasures with their families.

In order to extend the Society's interest in the mobile field, the Council set up in January, 1961 a Mobile Committee (Chairman, Mr. A. O. Milne, G2MI, succeeded later by Mr. C. H. L. Edwards, G8TL).

Developments in mobile equipment since the introduction of the Amateur (Sound Mobile) Licence have been very considerable, with the result that greatly enhanced efficiencies have been achieved, both on the local and DX bands.

London Lecture Meetings

As an experiment, only two lecture meetings in addition to the Presidential Address were arranged at the Institution of Electrical Engineers during the year. Unfortunately, in spite of the popularity of the subjects, attendances fell much below expectations.

A list of subjects and speakers follows:

October 21, 1961	" Single Sideband " By R. H. Hammans, (G2IG). (about 60 present)
January 20, 1961	" Presidential Address " " Military Communications " By Major General E. S. Cole, C.B., C.B.E., (G2EC). (about 70 present)
March 24, 1961	" Mobile Operation and its Problems " By N. A. S. Fitch, (G3FPK). (about 40 present)

The Council very much regrets that support for London Lecture Meetings has been so poor in recent years, but the problem of falling attendances is not confined to the Society.

The Council recall that 40 years ago when the membership in and around London was quite small attendances averaged 100 at each meeting—and at least eight meetings were held every year.

V.H.F. Beacon Station (GB3VHF)

The Society's V.H.F. Beacon Station at Wrotham Hill, Kent, came into operation during December, 1960, and results so far have been most encouraging. In order to ensure that the maximum possible use could be made of the station a receiving station with pen recording equipment was set up on the premises of J-Beam Aerials Ltd., at Northampton, with the co-operation of Mr. B. Sykes (G2HCG) and his fellow directors. The recordings are being critically examined by members of the United Kingdom C.C.I.R. Study Group V, who have shown much interest in the results obtained.

The Council records its thanks to all those who helped to bring the Beacon Station into operation and especially to the B.B.C., for allowing their Wrotham Hill site to be used for the installation of the equipment and aerial systems.

V.H.F./U.H.F. Awards

Acting on the advice of the V.H.F. Committee, the Council decided as from January 1, 1961, to institute a series of new certificates to mark successful v.h.f. and u.h.f. achievements.

The certificates are designed to recognize outstanding work on 4m, 2m and 70cm and are available for award to both transmitting and non-transmitting members. Up to June 30, 1961, nine certificates had been issued.

Certificates and Awards

The responsibility for checking claims for Society certificates and awards (with the exception of the newly introduced v.h.f. certificates), has been vested in Mr. George Verrill (G3IEC). The work of the Honorary Certificates Manager becomes more onerous each year, with the result that some delays have occurred in dealing with claims.

Mr. Verrill has not only continued to check claims, of which there have been a very great number, but he has also acted as a QSL Sub-Manager.

The Council records its thanks to Mr. Verrill for his services to the Society.

Films and Tapes

The Council record its thanks to the Honorary Curators of the Society's libraries of films (Mr. C. W. Austin, B.R.S. 22019) and tape recorded lectures (Mr. N. C. Ta'Bois, G3HWG).

Due to high production costs it has not been possible to add any new films, but the library of tape recorded lectures has been slightly increased.

The demand for films and tapes continued throughout the year.

QSL Bureau

For the 22nd year in succession, the work of the R.S.G.B. QSL Bureau has been in the hands of Mr. Arthur Milne (G2MI). The Council records its thanks to Mr. Milne and to the sub-managers who have helped to keep the work of the bureau running smoothly.

Technical Committee

The Technical Committee (Chairman, Mr. H. A. M. Clark, B.Sc.(Eng.), M.I.E.E., G6OT) dealt with a range of technical subjects during the year, including problems associated with slow scan (narrow band image), Amateur Television and Amateur Radio Teleprinting. Individual members of the committee also gave valuable assistance to the editoral staff and drafted replies to a variety of technical queries.

The Technical Development Sub-Committee (Chairman, Mr. G. M. C. Stone, G3FZL) continued its task of preparing programmes of work leading to the publication of up-to-date technical articles.

The Council records its thanks to the Technical Committee and to the T.D.S.C. for the important work undertaken during the year.

Scientific Studies Committee

This Committee, under the leadership of Mr. G. M. C. Stone (G3FZL), has worked very closely with the V.H.F. Committee, in fact much of the work of the Scientific Studies Committee has been dependent upon the V.H.F. Beacon transmitting station. The Committee has continued its scientific studies of the I.G.Y. and I.G.C. data, but it may be some time before a comprehensive report is available for publication. The Committee is co-operating with C.C.I.R. Study Group V and has made useful contributions to the work of that group and also to D.S.I.R.

The Council wishes to thank the members of the Committee for the valuable contributions they have made to the scientific aspects of the Society's work.

Contests Committee

The Council records its warm thanks to the Contests Committee who have again undertaken the onerous task of organizing, judging and reporting upon a wide variety of contests and other competitive events. The Chairman of the Committee was Mr. R. C. Hills, B.Sc.(Eng.) (G3HRH), from July to December 1960, and Mr. W. H. Matthews (G2CD) from January to June 1961.

National Field Day 1961, was won by Stourbridge and District Amateur Radio Society, with a score of 1,894 points. The High Power Section of the 1961 B.E.R.U. Contest was won by Mr. G. F. Barrett, ZC4IP (3,719 points) and the Low Power Section by Mr. F. E. Johnstone, G3IDC (1,955 points). Mr. W. E. Wilkinson (B.R.S.20317), with a score of 3,099 points, won the Receiving Section.

The R.S.G.B. Telephony Contest 1960, was won by Mr. S. J. Pilkington, G3NNT (4,322 points), followed by Mr. D. L. Courtier-Dutton, G3FPQ (4,266 points) and Mr. R. R. Yearwood, G3KGY (4,258 points). The Receiving Section of the Contest was won by Mr. R. B. I. Rutherford, A.1495 (2,766 points), with Mr. W. Chandler, B.R.S.21108 (2,731 points), in second place.

The number of entrants for the various contests organized during the year under review is compared in the accompanying table with the number of entrants for the corresponding contests in the previous year.

The number of stations known to have taken part in many of the contests bears no relationship to the number of entries actually received, which fact is a disappointment, both to the Council and to the Contests Committee.

Events in Calendar Sequence	1959/60		1960/61	
Second 144 Mc/s Field Day		37		40
National 144 Mc/s		23		26
National 420 Mc/s		2		2
National 1250 Mc/s		0		0
Low Power Field Day		11		8
Second Top Band (1·8 Mc/s)		54		46
21/28 Mc/s Telephony:				
Home Competitors	46		45	
Overseas Competitors	107		62	
		153		107
Receiving Section:				
Home Competitors	45		37	
Overseas Competitors	23		10	
		68		47
B.E.R.U. High Power	104		102	
B.E.R.U. Low Power	18		18	
B.E.R.U. Receiving	12		11	
		134		131
144 Mc/s Low Power	21		20	
144 Mc/s High Power	16		21	
		37		41
Affiliated Societies		52		47
First Top Band (1·8 Mc/s)		62		51
144 Mc/s Open		25		45
1250 Mc/s Tests		7		3
Low Power		11		14
First 144 Mc/s Field Day		39		37
420 Mc/s		10		24
National Field Day		108		120
70 Mc/s		2		12

Radio Amateur Emergency Network

The activities of the Network have been co-ordinated by the R.A.E.N. Committee (Chairman, Dr. A. C. Gee, G2UK). Numerous personnel changes took place during the year in an effort to achieve stability in as many parts of the country as possible. Various exercises with local groups of the British Red Cross Society and the St. John Ambulance Brigade and with the Police were carried out in order to test the efficiency of the Network.

The Annual R.A.E.N. Rally was supported by 53 transmitting and 12 non-transmitting entrants. The winners of the two sections were Mr. T. A. Russell, G3JFH/P (90 points) and Mr. R. H. Crowley, A.1960 (315 points). The comparative figures for the previous year were 48 transmitting home stations, 10 transmitting out-stations and 15 receiving stations.

The Council records its thanks to the R.A.E.N. Committee and to all members who have taken part in the activities of the Network.

TVI/BCI Committee

The TVI/BCI Committee (Chairman, Mr. David Deacon, G3BCM) continued to give valuable technical assistance and advice to members who had experienced difficulties in respect to television and/or broadcast interference.

The Council records its thanks to the Committee for their important services to the membership.

V.H.F. Committee

The V.H.F. Committee (Chairman, Mr. R. C. Hills, B.Sc.(Eng.), G3HRH) was chiefly concerned with the establishment of the V.H.F. Beacon Station at Wrotham. In addition, many other aspects of v.h.f. and u.h.f. work came within the purview of the Committee.

A further successful V.H.F. Convention organized by the Committee was held in London on May 27, 1961, whilst the Committee was represented at a Scottish V.H.F. Convention, held earlier in the year in Edinburgh. The Committee has assumed responsibility for judging claims for the recently introduced v.h.f./u.h.f. awards.

The Council records its thanks to the members of the Committee, who have again played a valuable part in co-ordinating the work of members interested in the v.h.f., u.h.f. and s.h.f. bands.

Mullard Award

The Mullard Award for 1960 was made to Miss Enid Bottomley (G3OHT) and Mr. Graham Thomas (G3OGT), both patients at St. Teresa's, Marazion, Cornwall, one of the Group Captain Cheshire, V.C., Homes. The Mullard Award Committee decided that Miss Bottomley and Mr. Thomas had, through the medium of Amateur Radio, rendered outstanding personal service to the community by their own example of fortitude and courage. The award was made on behalf of Mullard Ltd. by Major C. W. Andrews, M.C., (G2TP) in the presence of the President of the R.S.G.B. (Major General E. S. Cole, C.B., C.B.E., G2EC), Lord and Lady St. Leven and the civic heads of Penzance, St. Ives and West Penwith.

Vice-Presidents

During the year the Council elected Mr. Horace Freeman an Honorary Vice-President of the Society in recognition of his distinguished services to the Society as Advertisement Manager of R.S.G.B. publications since 1925. Also during the year the Council elected Mr. F. G. Lambeth (G2AIW), a Vice-President in recognition of his outstanding services to

(Continued on page 237)

Society News

Headquarters Fund—List No. 2

IT has been suggested that the notice regarding Headquarters Fund, which was inserted in the September issue of the R.S.G.B. BULLETIN, did not make it clear that donations should be remitted with the form appended to the notice.

It was the intention of the Council that donations should be remitted with the form whilst offers to make donations in future years would be noted as would offers to bequeath money to the Society.

The following is the second list of those who had contributed to the Fund up to October 31, 1961:

W. D. Ingle (GM2BD), R. Marriott (G3LTN), J. W. Swinnerton (G2YS), B. M. Benster (A.2787), D. S. Mattey (G5GM), D. H. Johnson (G6DW), D. C. Jardine (G5DJ), F. A. Robb (GI6TK), A. C. Elliott (G3GBI), A. J. Hawkins (B.R.S.21550), J. A. Laing (G8JG), G. F. Barrett (G8IP), C. J. Spencer (G3GRA), R. C. Hewitt (G3NIX), W. J. C. Hector (G3JTH), V. M. Desmond (G5VM), H. S. Smith (B.R.S.24587), C. Collins (G8SC), D. R. Hankinson (G3OVW), C. Evans (B.R.S.24480), T. J. H. Wood (G3JRR), R. L. Royle (G2WJ), D. Scott (B.R.S.22862), R. F. Smart (A.2368), D. A. S. Drybrough (B.R.S.22550), L. Critchley (B.R.S.22662), F. C. H. Hinton (G3AS), P. J. Wright (G3JDM), Shefford & District Amateur Radio Society, A. Brown (G2WQ), J. R. Petty (G4JW), J. R. Platt (G3FEV), K. B. Walker (B.R.S.22014), W. J. C. Pinnell (B.R.S.21624), B. G. Gaydon (A.2302), H. H. Mills (G3AJB), F. W. Garnett (G6XL), V. W. Stewart (GM3OWU), R. E. Andrews (G3NLN), J. Sciberras (ZB1PN), A. Stafford (G3CEL), H. W. Evens (G6CH), W. A. Sinclair (GM3KLA), Atomic Energy Research Establishment Amateur Radio Club, M. Warriner (B.R.S.12129), V. J. Reynolds (G3COY), J. R. Cantrell (B.R.S.21185), E. Bridgwater (G3HOD), A. B. Willsher (G3IG), J. L. Danks (G5DS), G. E. Hayes (G3KHE), A. M. Murray (GM3DOD), Group Capt. C. K. Street (G3DKS), R. J. C. Broadbent (G3AAJ), G. P. Brisbar (G3LWU), R. L. Smith-Rose (Penultimate Past President), K. R. Pugh (B.R.S.23320), E. H. Ross (G3LWS), W. H. Davis (G3LWE), L. Miles (GW3IMQ), Mrs. J. Leigh, D. S. Scales (B.R.S.18504), C. E. Willingham (G2VK), R. L. Barrett (G2FQS), L. Hingley (G3PBZ), I. A. Okaka (B.R.S.23440), G. C. Oxley (G8MW), P. D. Etheridge (B.R.S.21523), R. V. C. Court (B.R.S.22482), E. D. Watterson (G3AFJ), H. C. Broom (G2CWW), R. Pollock (G5KU), A. J. Kershaw (B.R.S. 22513), Radio Society of Harrow, H. Hyman (G3IZQ), A. Ralls (G3PDP), A. E. Harvey (G3IUG), K. Warr (A.2808), W. H. Gundill (B.R.S.19162), W. M. Dunell (G3BYW), D. A. G. Edwards (G3DO), S. H. Stephenson (B.R.S.6538), Wing Cdr. H. E. Bennett (G8PF), I. M. Gaye (B.R.S.3580), R. H. Hill (G3CBE), A. A. Lock (A.2903), C. P. Joules (B.R.S.24546), J. Piggott (G2PT), W. E. F. Corsham (G2UV), R. D. Scott (G6TS), J. V. Lay (B.R.S.23198), S. B. Jagger (GM3BGB), I. Hamilton (GM3CSM) F. G. Morriss (B.R.S.23500), G. Passmore (G3OEZ), E. Ennis (B.R.S.24574), C. R. Plant (G5CP), J. V. Newson (G3GY), A. L. Mynett (G3HBW), D. A. P. Hill (B.R.S.20671), D. W. Dillon (A.1598), A. C. Wadsworth (G3NPF), F. E. Fleet (G3LRR), C. W. Cragg (G2HDU), Wirrall Amateur Radio Society, Sqdn. Ldr. A. G. Godfrey (G3DAF), F. G. Lambeth (G2AIW), Major J. C. Clinch (DL2ER), Sqdn. Ldr. P. E. Lewis (B.R.S.24515), E. N. Cheadle (G3NUG), E. Briggs (G3IJU), D. Finlay-Maxwell (GM3BGA), J. E. Podd (G3OWT), F. E. A. Green (G3GMY), J. A. Healey (G3BJH), A. G. Embleton (G3BNF), C. L. Chappell (B.R.S.5272), Miss C. R. Hall (G8LY), L. F. Coursey (G4JZ), B. O'Brien (G2AMV), E. H. Sherlock (B.R.S.6604), M. Margolis (G3NMR), H. M. Synge (G3BOC), A. W. Tonkyn (G3EKM), W. H. Glen Dobie (G6DO), F. Rose (G2DRT), R. Blakey (A.1637), W. W. Humphries (G3IGK), W. Peat (GM3AVA), G. A. Frampton (G3LRH), Fl. Lt. C. R. Burchell (GI3NKQ), J. Lippold (B.R.S.22669), J. H. Bateman (G6BX), T. W. J. Homewood (G3BGW), G. Jobling (G2AOB), J. P. Downes (B.R.S.5477), J. C. Johnson (GM3GSC), H. Horan-Brown (ex-VU2BW), Miss C. A. Courtad (K8HKU), R. V. Courtad (W8FFK), R. J. Pigou (G3CRP), L. Keates (G3CUZ), R. H. M. Peach (G3AEQ), D. G. Rumsby (B.R.S.22844), L. D. E. Light (G3KDL), R. H. Farr (G8IJ), P. A. Thorogood (G4KD), R. V. Moore (G3LWB), N. Routledge (G3DDO), H. Riding (G3LED), R. Johnson (G2FFO), A. W. Wright (GM3IBU), H. L. Wilson (EI2W), F. J. U. Ritson (G5RI), J. E. Thayer (W1FZ), I. T. Haynes (VE2ATU), P. Hester (G5HS), E. F. Gadsden (G2BHZ), R. E. G. Caws (G3BRL), W. J. Robinson (B.R.S.21830), W. J. Miriam (G3NIV), C. L. Ward (G5NF), J. L. Boyce (B.R.S.19512), J. Buckley (G2BVU), G. B. Osborn (G3EJP), J. A. Hardcastle (G3JIR).

Total amount contributed to date: **£885 1s. 4d.**

In the first list of donors published in the October issue, the call-sign of Mr. G. I. Turner should have read G3DGN.

No G3Q Calls to be Issued

IN order to avoid possible confusion with the International Q Code the G.P.O. have decided not to issue call-signs in the series G3QAA-G3QZZ.

The Amateur Radio Handbook

THE Third Edition of *The Amateur Radio Handbook will* be published on Tuesday, November 21, 1961, and it is anticipated that the first 900 copies will be available for despatch to members during that week. Another 1,000 copies will be ready on November 27 and a further 3,000 copies by December 8.

Up to the time of going to press, nearly 2,000 members had taken advantage of the special pre-publication offer which closes on November 25, 1961. Full details of the offer were given in the combined voucher/label leaflet inserted in the October issue of the BULLETIN.

Council Ballot Scrutineers

AT the Ordinary Meeting of the Society held at the Institution of Electrical Engineers, London, on Friday, October 27, 1961, Mr. Frank Fletcher (G2FUX), Miss Beryl Fletcher (B.R.S.20988) and Mr. A. L. Browning (G8TK), were appointed to scrutinize the ballot for members to serve on the Council for 1962.

The ballot will be scrutinized at Headquarters on Monday, December 11, 1961.

London Meeting

AN attendance of nearly 150—one of the largest for some years—was recorded at the meeting of the Society held on Friday, October 27, 1961, at the Institution of Electrical Engineers, London, when Mr. G. A. Bird (G4ZU), F.Inst.P.I., Assoc.Brit.I.R.E., lectured on Multi-band Aerials. The chair was taken by Mr. J. W. Mathews (G6LL), a Vice-President of the Society, in the unavoidable absence of the President at the beginning of the meeting.

After a lively and interesting discussion, chiefly centred on enquiries concerning a new ferrite bead aerial designed by Mr. Bird, a vote of thanks was proposed by Mr. E. A. Dedman (G2NH). (Mr. Bird has been invited to contribute a description of his new aerial for publication—EDITOR).

Rules for the Gravesend Trophy

IT is with much pleasure that the Council have accepted an offer made by the Gravesend Radio Society to present to the Radio Society of Great Britain a silver fitted Rose Bowl Trophy for annual award to the R.S.G.B. Group or Affiliated Society placed second in the National Field Day event. The rules governing the award of the trophy are as follows:

1. The trophy will be awarded annually at the discretion of the Council, to the R.S.G.B. Group or Affiliated Society or Club whom the R.S.G.B. Contests Committee declare to have scored the second highest number of points in the R.S.G.B. National Field Day event.
2. The trophy will be available for presentation at the Annual General Meeting of the Society.
3. The Council reserve the right to award the trophy for some purpose other than that laid down in rule 1.

"Communications Receivers"

THE popular and informative series of articles by G. R. B. Thornley (G2DAF) entitled *Communication Receiver Design Considerations*, which appeared in the July-November 1960 issues of the R.S.G.B. BULLETIN and the articles in the March and April 1961 issues describing the G2DAF Receiver will be published in booklet form on November 22, 1961. The booklet, in the same format as the BULLETIN, will cost 2s. 6d. or by post 3s. from R.S.G.B. Headquarters.

Ballots for Regional Representatives

Region 5

MR. S. J. GRANFIELD (G5BQ), 47 Warren Road, Cambridge, having been nominated for the office of Region 5 Representative in opposition to Mr. T. A. T. Davies (G2ALL), of Comberton, Cambridge, a ballot now becomes necessary. Corporate members in Region 5 (Eastern) are invited to record *a vote on a postcard* in favour of one of the two candidates and to send the postcard to Headquarters, so that it arrives not later than December 16, 1961. (Region 5 comprises the counties of Bedfordshire, Cambridgeshire, Hertfordshire (outside London Region) and Huntingdonshire).

Region 7

MR. P. A. THOROGOOD (G4KD) of Edgware, Middlesex, having been nominated for the office of Region 7 Representative in opposition to Mr. F. G. Lambeth (G2AIW) of Whitton, Twickenham, Middlesex, a ballot now becomes necessary. Coporate members resident in Region 7 are invited to record a vote *on a postcard* in favour of one of the candidates so that it reaches the General Secretary not later than December 16, 1961. (Region 7 covers the whole of Middlesex and Surrey and all other territory within 25 miles of Charing Cross, London.)

Region 10

MR. H. G. HUGHES (GW4CG), of Clyne, Austen Avenue, Porthcawl, Glam., having been nominated for the office of Region 10 Representative in opposition to Mr. C. H. Parsons (GW8NP), of Cardiff, a ballot now becomes necessary. Corporate members resident in Region 10 (South Wales) are invited to record *a vote on a postcard* in favour of one of the two candidates and to send the postcard to Headquarters, so that it arrives not later than December 16, 1961. (Region 10 comprises the counties of Brecknockshire, Carmarthenshire, Cardiganshire, Glamorganshire, Monmouthshire, Pembrokeshire and Radnorshire).

Official Regional Meetings

Ayr

AN Official Regional Meeting was held at the Montgomerie Castle Hotel near Mauchline, Ayrshire, on September 14, 1961 when an attendance of about 60 was recorded.

The Council was represented at the meeting by Mr. E. G. Ingram, GM6IZ (Executive Vice-President and Scottish Zonal Representative), Mr. N. Caws, G3BVG (Honorary Treasurer) and Mr. P. H. Wade, G2BPJ (Zone A Representative).

At the business meeting a number of questions were answered by the representatives of the Council. During the meeting members' ladies went by bus to Culzean Castle, the Scottish home of General Eisenhower.

A get-together preceded dinner at which 76 members and ladies were present. After the meal Miss Joyce Callanan, daughter of GM3HLQ, assisted Mr. Caws in organizing the raffle.

Thanks are recorded to Mr. D Tannock, GM2BUD, Mr. J. Wilson, GM3KJF and the other members of the Convention Committee for organizing the event.

GM6MD.

Newbury

THE Region 17 O.R.M. held in the canteen of Elliotts of Newbury, on October 1, attracted an attendance of 56 members and friends.

The Council was officially represented by the President (Major-General, E. S. Cole, C.B., C.B.E., G2EC), Mr. L. E. Newnham (G6NZ), Past President, and Mr. F. A. Russell (G3BHS), Zonal Representative.

Opening the business meeting, the Regional Representative, Mr. M. P. Nicholson (G2MN), welcomed members and introduced the Council Representatives. Mr. Nicholson conveyed the regrets of Mr. G. M. C. Stone (G3FZL), who was unable to attend, and thanked the Newbury and District Radio Society who, by being hosts on this occasion, had enabled the O.R.M. to be held in the northern part of the region.

The President briefly surveyed the Society's activities, aims and objectives, after which the meeting was thrown open for a " Question and Answer " session. Very many questions were asked covering a substantial cross section of general interest, e.g. *Amateur Handbook*, Amateur Radio in the Army Cadet Force, junior membership, society status, new H.Q., subscriptions, representation, BULLETIN, etc. The questions were well put and equally well answered although perhaps not always quite as expected.

After an interval for tea, followed by the raffle proceedings, Mr. Newnham gave a most interesting talk on the work done at the Geneva Radio Conference of 1959. As anticipated this gave rise to still more questions.

The Berkshire C.R. (Mr. E. Smith G3JMT) proposed a vote of thanks to the President and Council Members for their interest and attendance. Mr. Nicholson in closing the meeting again thanked the Newbury Society and specially Mr. J. A. Gale (G3LLK) for his great help in making the local arrangements.

A wide range of chassis, cases and cabinets made by Philpott's Metalworks, (with G4BI in attendance) as well as products of Electroniques (Felixstowe) were on display. A large amount of technical information was also available.

Donors of gifts for the raffle, to whom most sincere thanks are offered, were:—Telegraph Condenser Co., Erie Resistors Ltd., Light Soldering Developments Ltd., Jackson Bros. (London) Ltd., Newmarket Transistors Ltd., Adcola Products Ltd., Electroniques Ltd., Daystrom Ltd., McMurdo Instrument Co. Ltd., Semiconductors Ltd., Philpotts Metalworks Ltd., Wright & Weaire Ltd., Data Publications Ltd., Mosley Electronics, Multicore Solders Ltd., Stratton & Co. Ltd., and G2DZT.

G2MN

R.S.G.B. Certificates and Awards

THE Council much regrets that quite serious delays have occurred recently in the handling of claims for R.S.G.B. certificates and awards. These delays were due to the illness of the mother of the Hon. Certificates Manager (Mr. George Verrill), who has now assured the Council that in future all claims will be dealt with promptly.

R.S.G.B. QSL Bureau

IN order to lighten the burden on Mr. George Verrill (G3IEC), Mr. F. Ellesmere (G3LGP), 244 Portland Street, Southport, Lancashire, has been appointed QSL Bureau sub-manager for call-signs in the series G3OAA-G3PZZ.

Mr. C. R. Emary (G5GH), 133 Fairlands Road, Thornton Heath, Surrey, is now the sub-manager responsible for the series G3NAA-G3NZZ.

R.S.G.B. Bulletin—October 1961 Issue Posting Certificate

FOR the information of those members who complain that the BULLETIN is unevenly distributed it is proposed in future to publish a note of the date when the previous issue was handed into the Post Office.

* * *

All copies of the October 1961 issue were posted on Monday, October 16, 1961, and the Society holds a certificate to that effect signed by the Hitchin, Herts, Postmaster.

Wolverhampton Amateur Radio Society

THE call-sign shown on the special card produced by the County Borough of Wolverhampton and illustrated in the October issue of the BULLETIN was that of a non-member of the Wolverhampton Amateur Radio Society. The holder of the call G3JRR is Mr. T. J. H. Wood, 431 Folkestone Road, Dover, Kent, to whom an apology has been sent by the Wolverhampton Amateur Radio Society for the mistake. The card was supplied to the R.S.G.B. by the Town Clerk of Wolverhampton together with the information upon which the caption was based.

Speedy Recovery, David

ON October 20, 1961, while on his way to attend an R.S.G.B. meeting in Wishaw, near Glasgow, the Society's Region 14 Representative Mr. D. R. Macadie (GM6MD), met with a car accident which resulted in fractures to his right leg and damage to his ribs. The driver of the car was Mr. A. Reid (GM3NFR) and the other passenger was Mr. J. McEwing (GM2DPW). Mr. Macadie was the most seriously injured.

Mobile Column

MR. C. R. PLANT (G5CP), 12 Nottingham Drive, Wingerworth, Chesterfield, Derbyshire, has accepted an invitation to produce a *Mobile Column* each month for the R.S.G.B. BULLETIN commencing with the December 1961 issue.

During the autumn and winter the emphasis will be on the technical aspects of mobile work, whilst in the spring and autumn space will be devoted to forthcoming mobile rallies and to brief reports on those that have taken place.

News of general interest should be sent to reach Mr. Plant not later than the 20th of the month preceding publication.

Australian Amateur Allocations

THE Australian Post Office has announced that the following frequency allocations are now available to Australian radio amateurs.

Mc/s	Allocation
1·8– 1·86	A new band for Australian amateurs. Shared with Radionavigation, which is the primary service. Loran system being replaced by other methods.
3·5– 3·7	Exclusive amateur allocation.
7·0– 7·1	Exclusive amateur allocation.
7·1– 7·15	Shared with Broadcasting, which is the primary service.
14 – 14·35	Exclusive amateur allocation.
21 – 21·45	Exclusive amateur allocation.
28 – 29·7	Exclusive amateur allocation.
50 – 52	Temporary allocation until required for Broadcasting (Television).
52 – 54	Exclusive amateur allocation.
144 –148	Exclusive amateur allocation.
288 –296	Temporary allocation until July 1, 1963.
420 –450	Shared with Radiolocation, which is the primary service but unlikely to be released to amateurs until January 1, 1964 when present fixed stations move.
576 –585	Temporary allocation until required for Broadcasting.

The bands 1215–1300, 2300–2450, 3300–3500, 5650–5850 and 10,000–10,500 Mc/s are shared with Radiolocation which is the primary service.

The band 26·96–27·23 Mc/s is shared with Fixed and Mobile in addition to I.S.M. (Industrial, Scientific and Medical). There are I.S.M. allocations also at 2450 and 5800 Mc/s.

It will be noticed that Australian amateurs are authorized to use the band 7100–7150 kc/s whereas the Geneva Frequency Allocation Table shows that in Region III (Australasia) that band is exclusively assigned to Broadcasting. Frequencies between 50 and 54 Mc/s are not available to amateurs in Region I (Europe and Africa).

Grafton Radio Society Christmas Party

FOR several years the Committee of the Grafton Radio Society—one of the best known societies in London—have been considering the question of organising a social evening for London amateurs somewhere in the West End.

With that thought in mind this year's Grafton Christmas Party—the third of a series—will be held on Saturday, December 2, 1961, in the Fountain Ballroom of the Royal Hotel, Woburn Place, W.C.1 (two minutes from Russell Square Underground Station), commencing at 7.30 p.m.

Tickets, price 12s. 6d. single or 22s. 6d. double (which prices include refreshments), can be obtained from the Honorary Secretary (A. W. H. Wennell, G2CJN), 145 Uxendon Hill, Wembley Park, Middlesex, or from any member of the Grafton Radio Society.

Many well-known amateurs have already promised to support this event which will be a curtain raiser to the festive season.

Annual Report of the Council (continued from page 234)

the Society as V.h.f. Manager, contributor of the v.h.f. notes to the R.S.G.B. BULLETIN and as Region 7 Representative since 1954.

Silent Keys

The Council records with deep regret the passing of a number of members including W. R. Metcalfe, G3DQ (President 1960); Gerald Marcuse, G2NM (President 1929-30); Fergus Southworth, GW2CCU (Region 11 Representative); Nina Barrett, G3GYL; Harry Kemp, G4OT; C. R. Greenland, G4HD; J. S. W. Nuttall, G4BO; George Western, G3LFL; Jack Thorpe, G5TO; Sydney Davison, G6SO; H. J. Pollard, G5PO; W. Scott Hay, GM2FV; and J. Wilson, GW8JW.

Council Meeting Attendances

The following table gives a list of attendances at meetings of the Council during the period July 1960 to June 1961.

Name	Actual	Possible
Bartlett, H. A.*	4	6
Caws, N.	10	12
Cole, E. S.†	6	6
Deacon, D.*	6	6
Edwards, C. H. L.	12	12
Ellis, K. E. S.	10	12
Hills, R. C.	12	12
Ingram, E. G.	12	12
Kay, J. D.	10	12
Metcalfe, W. R. D	6	6
Milne, A. O.	9	12
Newnham, L. E.	11	12
Parker, F. K.	9	12
Russell, F. A.	10	12
Smith-Rose, R. L.	1	12
Stone, G. M. C.	12	12
Wade, P. H.	9	12
Williams, A. C.	6	12
Yeomanson, E. W.	11	12

* Retired from Council, December 31, 1960.
D Deceased, December 25, 1960.
† Elected to Council, January 1, 1961.

Marconi 60th Anniversary

IN connection with the plans announced last month for celebrating by means of Amateur Radio the 60th anniversary of the occasion when a wireless signal was transmitted across the Atlantic for the first time, consultations are now taking place with the G.P.O. with a view to authorizing the transmission of special messages from authorities in this country to the Prime Minister of Newfoundland. Under existing amateur licensing regulations in the United Kingdom, the transmission of messages from a third party over an amateur link is prohibited, but the G.P.O. have suggested a method which will permit the object to be achieved without infringement of the law.

It is proposed that greetings will be conveyed by the Cornish amateurs to the Newfoundland station from the chairman and directors of the Marconi Wireless Telegraph Company Ltd., whose illustrious founder, by his great feat of 60 years ago, presaged the vast network of modern world-wide radio communications. It is hoped that similar greetings will be conveyed by the Cornish station from the G.P.O. and from the Radio Society of Great Britain.

It is believed that the Lord Lieutenant of Cornwall (Lt. Col. Sir Edward Bolitho, K.B.E., C.B.E., D.S.O.), will be present at the Poldhu, Cornwall, station when the messages are transmitted at 6.30 p.m. on Tuesday, December 12, 1961.

The English end of the Amateur Radio link will be manned by members of the Cornwall R.S.G.B. Group, whilst members of the Newfoundland Radio Club will be in charge of the station at Signal Hill. The call-signs to be used during the period from December 9 to December 17, 1961, will be GB3MSA and VO1MSA.

GB2RS SCHEDULE

R.S.G.B. News Bulletins are transmitted on Sundays in accordance with the following schedule:

Frequency	Time	Location of Station
3600 kc/s	9.30 a.m.	South East England
	10 a.m.	Severn Area
	10.30 a.m.	North Midlands
	11 a.m.	North East England
	11.30 a.m.	South West Scotland
	12.00	North East Scotland
145·55 Mc/s	11.15 a.m.	Beaming south-east from Leeds
	11.30 a.m.	Beaming south-west from Leeds
	11.45 a.m.	Beaming north from Leeds
145·3—145·4 Mc/s	12 noon	Beaming north from South East England
	12.15 p.m.	Beaming west from South East England

News items for inclusion in the bulletins should reach Headquarters not later than first post on the Thursday preceding transmission. Reports from Affiliated Societies and from non-affiliated societies in process of formation will be welcome.

East African Amateurs
Dinner in Nairobi—Reunion proposed in London

THE Radio Society of East Africa are holding their Annual Dinner at the Pagoda Restaurant, Government Road, Nairobi, on Saturday, December 16, 1961.

Mr. M. C. Paveley (G3GWD, ex-VQ4CW), who until recently was Honorary Secretary of the R.S.E.A., has in mind organizing an informal function for ex-members of that Society at present in the United Kingdom as well as members on leave at the time. The function would be held on or about December 16 in London.

Those interested in the proposal are asked to contact Mr. Paveley at 91 Village Way, Beckenham, Kent.

Home members who know the present whereabouts of ex-VQ3, VQ4 or VQ5 amateurs or who will be in contact with East African amateurs expected to be on leave in December are asked to inform them of the proposal.

Generous Offers

MR. I. LEE-DUNCAN, Hans House, 16 Hans Road, London, S.W.3 (Telephone Kensington 3764) has a quantity of used and ex-Government radio equipment for disposal, without charge, to any disabled, blind or otherwise handicapped member of the Society. Letters of enquiry, enclosing a stamp, should be sent to Mr. Lee-Duncan at the above address.

* * *

MR. G. A. GRAY (B.R.S. 20357), 4 Bengal Road, Ilford, Essex, offers to send an occasional parcel of newspapers and magazines, free of charge to any member of the Society who is resident in an isolated part of the world. Letters should be sent direct to Mr. Gray at the above address.

Silent Keys

WALTER KROHN (G6KJ)

We regret to record the death on October 20, 1961 of Mr. Walter Krohn (G6KJ), after a long illness. Although blind from an early age he achieved many wonderful things, through great courage and determination.

Licensed in 1923, Walter Krohn was a real example of what a true " ham " should be. His skill was such that he was employed as a professional operator throughout the war years. Mr. Krohn was qualified in physiotherapy and at one time taught anatomy at the Royal National Institute for the Blind. Walter also served as a member of the Buckingham Town Council for 10 years. All those who knew him will feel very grieved at his passing.

Sympathies are extended to his wife, son and daughter.

G5HJ.

KEN CRISPIN (G6MH)

It is with deep regret that we record the death, on October 19, 1961, of Mr. Ken Crispin (G6MH) of Southend-on-Sea. A keen member of the Southend and District Amateur Radio Society since before the Second World War (during which he served in the Royal Navy), Ken had served as Chairman, Honorary Secretary and Technical Advisor.

Mr. Crispin was always ready to help others, particularly younger members, and for many years participated in the R.S.G.B. Slow Morse Practice Transmissions programme. He also played a leading part in arranging D/F Contests and in N.F.D.

His many friends feel his passing deeply. To his mother and family we offer our sincere condolences at this sad time.

G3AXN.

HAROLD VALENTINE WILKINS (G6WN)

The death occurred on Sunday, October 22, 1961, of Mr. Harold Valentine Wilkins (G6WN), a Vice-President of the Society, a former member of the Council and, for many years, West London District Representative.

In the days before the last war, Harold and his brother Leslie (they were then living together at Hanwell, Middlesex), were among the best-known amateurs in the United Kingdom. Harold in particular made a name for himself as an Empire Link Station. He was also a pioneer worker on 10m.

Harold Wilkins became West London D.R. in 1929, an office he held until 1946. He was elected to the Council in 1932, and served for nine years, and was made a Vice-President in 1947 in recognition of his outstanding services to the Society.

During the 1939-1945 war, he was engaged on voluntary duties with the Royal Observer Corps, duties which were carried out with the same quiet efficiency and devotion as marked his services to Amateur Radio and his daily job right to the last.

In more recent years he had suffered serious ill-health, but whenever he was well enough to take part in Society activities the same keenness as of yore was in evidence. He was a founder member of the Radio Amateur Old Timers' Association and a member of the Thames Valley Amateur Radio Transmitters' Society.

At the time of his death he was in the employ of E.M.I. Ltd., where one of his closest and oldest friends was F. J. H. (Dud) Charman, B.E.M. (G6CJ).

Sympathies are extended to Mrs. Wilkins—Ivy to all her many friends in Amateur Radio circles—brother Leslie (G6RW) and to all other members of their family.

The funeral service was at Ruislip Crematorium on October 30, 1961, when Headquarters was represented by the General Secretary (Mr. John Clarricoats, O.B.E.), and Miss May Gadsden. Also present were Mr. W. E. Corsham (G2UV) and Mrs. Corsham, and Mr. Frank Fletcher (G2FUX) and Mrs. Fletcher.

J. C.

National Field Day 1961

N.F.D. Shield	**Stourbridge and District Amateur Radio Society (G3BMY/P and G8GF/P)**	**1894 points**
Runners-up	**Gravesend Amateur Radio Society (G6BQ/P and G6VC/P)**	**1787 points**
Scottish N.F.D. Trophy	**Dumbartonshire Group (GM3KBZ/P and GM3ITN/P)**	**1249 points**
Bristol Trophy	**Cannock Chase Amateur Radio Society (G4CP/P)**	**1136 points**
Leading 1·8 Mc/s Station	**Ayrshire Group (GM3KJF/P)**	**423 points**
Leading 3·5 Mc/s Station	**Cardiff Group (GW5BI/P)**	**514 points**
Leading 7 Mc/s Station	**Stamford and District Group (G3FUR/P)**	**663 points**
Leading 14 Mc/s Station	**Port Talbot Group (GW5VX/P)**	**794 points**
Leading 21 Mc/s Station	**Oxford and District Amateur Radio Society (G2DU/P)**	**156 points**
Leading 28 Mc/s Station	**Gravesend Amateur Radio Society (G6BQ/P)**	**32 points**

Overseas station submitting a check log and contributing most points to competitors ... ZC4FD

THE results of the 1961 N.F.D. event show little change from those of 1960, though Stourbridge, with two of the best known call-signs in contest work, G3BMY and G8GF, have changed last year's second place for first and Gravesend, third last year, have moved up to second place leaving Stamford, the 1960 winners, in third place. These three groups have shared the top places for several years and their Field Day " know-how " must now be so great that it will take a very determined effort by the rest of the field if they are to be displaced.

It is not so long back however, that Bristol (remember—" all shipshape and Bristol fashion," vintage 1954) won for two years and now they are coming up again. Port Talbot are again only just out of a place and even if they had not the benefit of extra points on 1·8 Mc/s and 3·5 Mc/s they would still be well in the running. Port Talbot are to be particularly congratulated on their 14 Mc/s score—highest on any band: surely their Zonal Representative on Council must be proud that his call-sign should have brought so many points!

The leading single station group was Cannock Chase using the well-known DX call-sign of G4CP. Last year Cannock Chase put on two stations and achieved fourth place in the table.

The leaders on the various bands show a general rearrangement of last year's placings—Gravesend only just failed to bring off the top 7 Mc/s position for the seventh time but as a consolation they have the 28 Mc/s leadership although with so little activity on this band it involves a lot of work for a meagre return.

Conditions now seem to be following the downward drift of the sunspot count and Field Day scores bear this out; even so, the competitive spirit is still there. The other condition, weather, which can make or mar a Field Day seems to have been acceptable to all this year and although there was not the blazing sunshine that followed later in the month there was little rain and the high winds that proved such a hazard in 1960 were not so much in evidence this year. As the title of the contest implies the invasion of the countryside, it is not surprising that there are reports of unwelcome activity from the denizens of the fields—Coo RM as one station named it!

Equipment troubles do not appear to have been too prevalent but it does seem that the main source of breakdowns was the petrol/electric generator set. Nevertheless several groups have suggested that p.e. sets be barred—on the other hand the vagaries of these devices appear to provide sufficient handicap.

One group reported failure of an 807 (running at 9 watts!) and at considerable risk from the house dog the faulty valve was replaced during the night. The same group nearly lost the tubing used for masts (did they leave it on the site on

Dorking and District Radio Society's G3IAM/P at Polesden Lacey, Surrey, operated by G3JEQ, G3HZJ and G3AEZ.
(Photo by Kine Production Services Ltd.)

G3MA/P, operated by G3GEN and G3MA, on behalf of Gloucester Group during N.F.D. 1961.

Guildford and District Radio Society operated G3FZC/P from Newlands Corner, Surrey. Operators included G3IAF and G3FZC (above) and G3EWE, G3OXI, G3OLM and G3HTP.
(Photo by Kine Production Services Ltd.)

Friday night?). York had an unusual set-back in the illness of an operator during the night. It is hoped that he is now back to health again.

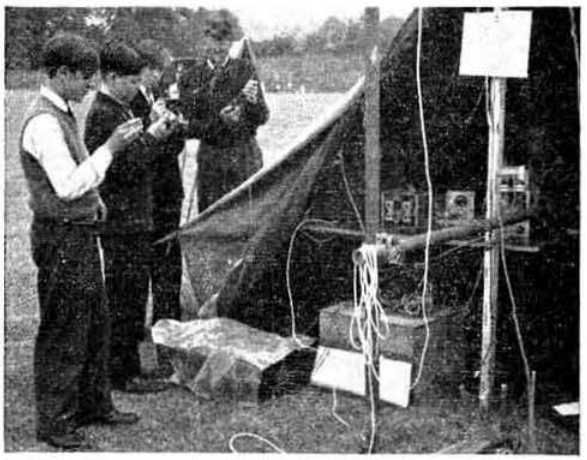
All the hazards of Field Day are not confined to contestants out in the countryside—G3NVK of Melton Mowbray, worked many stations from his home QTH and then found he had had his aerial shot away—not we are glad to say, by an outbreak of air warfare, but by a neighbour shooting at (and missing) a rook on the top of the mast.

Band Reports

28 Mc/s

Conditions on this band were as poor as expected and if it had not been for the ZC4/P stations few entrants would have managed to make double figures. Most stations used the aerial and equipment of some other band suitably modified so that there was not much extra trouble involved, but at present it does seem that the advantages in points are outweighed by the time loss when the band has to be scanned occasionally.

From left to right, G3ONQ, G3IGW and G3NBI operating G3IGW/P on behalf of Halifax and District Amateur Radio Society.
(Photo by G3NBS)



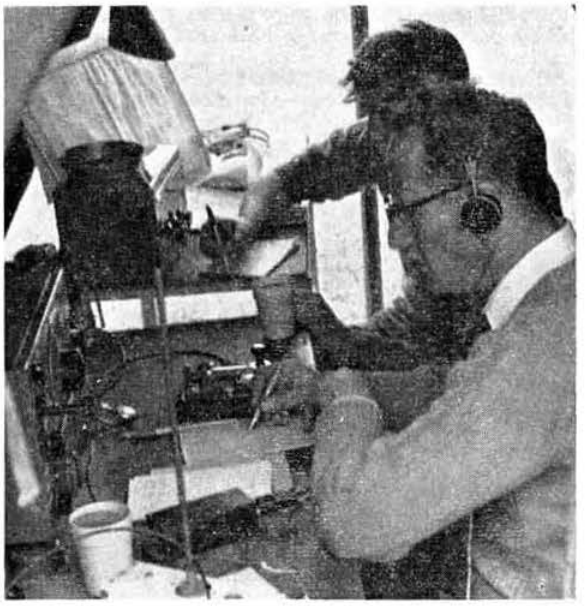
An anxious moment at G3BBR/P of the Redhill and Reigate Group—S. W. L.'s Wells, Emeny and Feilder help G3IKO examine a feeder cable. The base of a home-built hydraulic mast is in the foreground.
(Photo by Kine Production Services Ltd.)

21 Mc/s

Results from this band are following those of 28 Mc/s on the downward path and a very far cry from the 700 plus points of Stamford a few years back. Conditions seem to have been poor for all parts of the British Isles and the only advantage would appear to be some form of variable directional array—either a rotatable wire beam, or switched array so that a slight improvement can be obtained when weak signals do appear. The cubical quad and ZL Special do not pose too difficult a constructional problem at this frequency and several groups are now suitably equipped.

14 Mc/s

This band was not quite as prolific in producing contacts



G3OJS and logkeeper add more points to the score of G3HIW/P of Ilford Group.

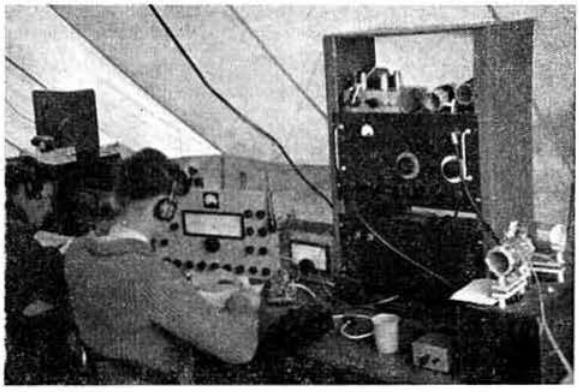
as in previous years, but even so it proved the medium for a good score for most stations. Conditions were good, but the number of W's worked was not nearly as great as in other years although this was possibly a blessing in disguise as stations report being able to seek out and work stations in other parts of the world—a broadening of interest is always good and should result in some phenomenal scores in a few years' time.

7 Mc/s

Conditions were good, if variable—a mixture of short and long skip, but considering the narrowness of the band, it carried the load very well. The need is certainly going to be for greater and greater selectivity on this band if contacts are to be completed. Similarly there would be an advantage in making sure that the aerial does radiate as much of the precious power as possible. The need for all round coverage in this band rules out fixed directional arrays, but stations have had success with switched aerials.

3·5 Mc/s

Conditions were excellent nearly all the time and with many DL and HB portables active, the band produced good



Leading station on 3.5 Mc/s was Cardiff Group's GW5BI/P. GW3NAM was operating when this picture was taken.

scores. Again, QRM makes selectivity the all important factor and with all round, all time coverage, some operators are tempted to stay on this band for long periods; maybe they are wise as scores are mounting all the time.

1·8 Mc/s

This year Top Band was better than previously and apart from the inevitable fish-fone and noise, the band was in good shape. Generally it seems that although no part of this band is recommended for c.w. working, all stations continue to operate the bottom 75 kc/s with all the difficulties of QRM, but this is not peculiar to Field Day, as the same thing happens in the individual Top Band Contests and also the club affairs.

Comments

For those statistically minded readers there are some interesting figures: 18 groups active last year are on the missing list (one GI, one GW and two GMs). Thirty-seven stations not listed last year competed in 1961, of which five were GMs. Of the 18 missing stations, the GI was a two station group and of the 38 new, six were two station groups (five G and one GM).

Comparing the competing G stations, nine two station groups went single station and lost their former positions by 20, 24, 25, 36, 37, 44, 50(2), and 80 places. Four one station groups put out two stations: one lost 17 places and the others gained 22, 30 and 33 places respectively. For the remainder

G3JBR of Scarborough Amateur Radio Society operating G4BP/P, active on 3.5, 7 and 21 Mc/s during N.F.D.

two station G groups who turned out as last year, twelve lost position by 12, 13, 14, 15(2), 16, 19, 20, 26, 28, 33 and 50 places, whilst six gained position by 6, 7, 13, 17, 33 and 52 places. The two GI groups gained 23 and 29 places. Four GMs gained 4, 7, 38 and 45 places while two lost 2 and 10 places. Two GW stations gained 1 and 10 places and one lost 50 places. All the GI, GW and GMs were two station groups. The fact that Port Talbot, the only GW entrant to threaten the leaders in previous years, have only moved from fifth to fourth place appears to show that the three regular contenders, Stourbridge, Gravesend and Stamford were not harmed very much by the changing scoring, at least we have made considerable gain in Scottish portables to work. The nearest GM only moved up four places, but Ayrshire group came up a jump–45 places: both these stations have still a long way to go before they unseat the leading stations. Belfast was up 23 places—well isn't that what is wanted? Some threat to the unassailable leaders to keep the competition keen.

Stourbridge and Gravesend registered their opposition to the bonus points on 1·8 Mc/s and 3·5 Mc/s, yet their placings rather take the point out of their grievance.

The use of petrol/electric generator sets has been objected to, but this has already had comment.

This analysis cannot anticipate the Committee's recommendations for next year's rules, but members' comments will as always be studied by the Committee and Council will give a final decision on whatever steps are taken to maintain a keen enjoyable contest.

Hetton Show and Mobile Rally

MORE than 8,000 visitors attended the Hetton Show at Houghton-le-Spring, Co. Durham, on August 26, 1961, 110 of them radio amateurs including 20 mobiles. G3CKC/A on Top Band was kept busy working mobiles and fixed stations. Some trouble was experienced with the h.f. transmitter and the repair work provided further interest for members of the public.

G3MYF of Otley won the prize for the longest distance travelled on the day of the rally, with G3DMK as runner-up. The prize for the best constructed equipment went to G3MOU for his oscilloscope.

Wireless World Diary 1962

COPIES of the *Wireless World Diary* for 1962 in rexine are now available from R.S.G.B. Headquarters price 4s. 10d. each (postage 4d. extra). The *Diary* includes 80 pages of reference material plus the usual diary pages showing one week at an opening. A leather edition is also available price 7s. 2d. post free.

CONTEST NEWS

— RESULTS — REPORTS — RULES —

Second 144 Mc/s Field Day 1961

THE best DX contact during the Second 144 Mc/s Field Day on July 2, 1961 was made with ON4TQ/P by the winner, H. Boakes, G8SB/P, operating from a site south of Buxton, Derbyshire, at a distance of 325 miles. G8SB/P was the only entrant to work ON4TQ/P but did not work F9JY/M, the only other continental mentioned in the logs. G3AYT/P and GW3JZN/P, in second and third places respectively, are separated by only five points so there is likely to be keen rivalry between them when next they meet in a 144 Mc/s contest.

Recent reports on v.h.f. contests have contained considerable criticism of entrants for poor log keeping and for neglecting to observe contest rules. Exchanges of reports were well handled on this occasion but otherwise the Contest Committee's comments in the report on the First 144 Mc/s Field Day 1961 (R.S.G.B. BULLETIN, September 1961, p. 133) apply equally to this event. It is to be hoped that more care will be taken with preparation of entries for events in 1962 when the Committee intends applying the rules firmly. Errors and omissions will not be overlooked as in the past. The details required on the log and cover sheets all have useful purposes and are helpful in checking the entries.

If " locations as transmitted " can be found on the 10 mile to 1 in. Ordnance Survey map, there should be no difficulty in calculating distances correctly. In this event, one contestant claimed a distance of 10 miles for a contact with a station one mile away while others claimed generous mileage followed by a question mark, leaving it to the Contests Committee to decide the real distance. It is evident in all these cases that no query would have arisen if the locations had been correctly exchanged.

In future, some penalty will be laid on transmitting stations which give rise to errors. All locations should be repeated back to ensure accuracy. One further point: competitors must not change the description of the " location as transmitted " during a contest.

Well over 300 stations were reported active during the event, including 36 portables and 14 mobiles which did not submit entries. The total potential entry was therefore 90. Possibly they were non-members: if so, some propaganda would seem to be necessary amongst v.h.f. enthusiasts.

A check log from G3LCH is gratefully acknowledged.

Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	G8SB/P	13,880	21	GW3KYT/P	7,270
2	G3AYT/P	13,169	22	G5HZ/P	7,158
3	GW3JZN/P	13,064	23	G3GTN/P	6,846
4	G3LAR/P	12,808	24	GW3JZG/P	6,795
5	G3JWQ/P	11,532	25	GW4LU/M	6,772
6	GW3KMT/P	11,500	26	G3LQN/P	6,632
7	GW3JPB/P	11,235	27	G3LBA/P	6,502
8	G3MAR/P	10,781	28	GW3KCB/P	6,337
9	G3MNQ/P	10,324	29	G2DHV/P	4,966
10	G3JMA/P	10,133	30	G3HWS/P	4,815
11	G2HIF/P	9,560	31	G3XC/P	4,670
12	G3FRV/P	8,891	32	G8LM/P	4,589
13	G3NNG/P	8,864	33	G3KEU/P	4,537
14	G5ZT/P	8,694	34	GM2FHH/P	3,518
15	G3NFA/P	8,276	*35	G3CGQ/P	3,365
16	G3FD/F	7,997	36	G2HJV/P	3,062
17	G3ERD/P	7,761	37	GM3KYI/P	1,873
18	G3OBD/P	7,693	38	G3JDM/P	1,547
19	G3MDH/P	7,387	39	GM6XW/P	1,527
20	G3GCX/P	7,325	40	G3EFX/P	1,448

* *Late Entry.*

Second 420 Mc/s Open Contest 1961

ALTHOUGH conditions and activity during the Second 420 Mc/s Open Contest, on July 16, 1961, were not good, some notable contacts took place. G3LTF, the winner, had the longest distance contact of 144 miles with G3JWQ/P, while many other stations had contacts over 100 miles.

For sheer perseverence G5ZT/P must be mentioned. He operated for the whole contest from Haytor, Devon, but only had two contacts, both over 80 miles. In all, six portable stations are known to have been active during this contest, three from rare counties.

Many competitors again do not seem to have read the rules on the cover sheets, as half the entries had errors of one kind or another. When deciding on the description of the location of their station, entrants should check that it is on the 10 miles to the inch Ordnance Survey map. Though a site may be well-known locally and of considerable size, it will not necessarily be marked on this map, especially if it is near to a much larger place. The rule requiring the " location as transmitted " to be recorded was observed much better on this occasion, though a few stations omitted to do so. When recorded it helps considerably in checking.

A check log from G3HBW is gratefully acknowledged.

Posn.	Call-sign	Points	Contacts	Greatest Distance	Power Input	Aerial
1	G3LTF	1510	30	144 miles	75 watts	48 ele.
2	G3JMA	1400	32	130 ,,	55 ,,	40 ele.
3	G3JWQ/P	1376	20	144 ,,	6 ,,	4-over-4-over-4
4	G2XV	1219	22	116 ,,	90 ,,	40 ele.
5	(G3HAZ	955	(11	88 ,,	15 ,,	10 ele.
	(G3HAZ/P		(11	113 ,,	5 ,,	24 ele.
*†	G3FP	791	26	142 ,,	100 ,,	16 ele.
*†	G2HDJ	754	26	136 ,,	100 ,,	44 ele.
8	G3NOX/T	735	20	63 ,,	150 ,,	64 ele.
9	G2CIW	604	15	119 ,,	60 ,,	16 ele.
‡	G5DF	585	13	82 ,,	25 ,,	16 ele.
11	G3LHA	512	15	96 ,,	25 ,,	8-over-8
12	G3JZG/P	498	13	115 ,,	30 ,,	7-over-7
*	G2RD	435	22	60 ,,	27 ,,	24 ele.
‡†	G2DQ	374	13	41 ,,	15 ,,	—
15	G6XA	360	11	70 ,,	60 ,,	12 ele.
16	G5UM	326	13	43 ,,	12 ,,	7-over-7
17	GW3ATM/P	282	6	90 ,,	10 ,,	16 ele.
*†	G5ZT/P	171	2	91 ,,	9 ,,	8-over-8
‡‡	G5SD		19	58 ,,	6 ,,	5 ele.

* Location not on 1/10 in. Ordnance Survey map.
† Location as transmitted not recorded on cover sheet.
‡ No cover sheet received.
‡‡ No claimed score.

Region 1 Field Day

LIVERPOOL Group were the winners this year, scoring 131 points, with Wirral runners-up at 104 points. Third were Blackpool who scored 75. It was felt that this year's event was more interesting than on previous occasions due to the intentional coincidence with Low Power Field Day.

Liverpool achieved their fine score and a commanding lead in the early hours of the contest by means of contacts with portable stations on 3·5 Mc/s. It was also possible for contestants to submit entries for both events.

B.O'B.

A Polish Tribute to Amateur Radio

FOR the first time the familiar diamond-shaped emblem worn by radio amateurs the world over has appeared on a postage stamp. The Polish postal authorities recently issued a 2.50 zloty value in blue and bronze with the emblem of PZK (the Polish national Amateur Radio Society) in the centre of a symbolic representation of the globe with the words CQ de SP above the emblem. The stamp appears to have been issued in connection with a Warsaw-Kracow Exhibition.

We shall be glad to hear from any member who has further information to offer about this unique issue.

Letters to the Editor . . .

Neither the Editor nor the Council of the Radio Society of Great Britain can accept responsibility for views expressed by correspondents. Letters for inclusion in this feature should be concise and preferably not more than 200 words in length.

New Society Headquarters

DEAR SIR,—I refer to Mr. Maurice Child's letter in the September issue of the BULLETIN and the President's appeal for funds in the same issue.

Firstly I should like to record my agreement with the proposition that headquarters on the lines suggested by Mr. Child should be acquired and the idea that siting should be convenient for road transport rather than in a city centre.

I should like, however, to suggest that automatic choice of the London area should not be made without due thought. I write without detailed knowledge of the geographical location of members but I should imagine that if one were to choose a point in the country nearest to the majority of members, it would not be in London but in the Midlands or North of England. Manchester and Birmingham suggest themselves as possible areas. Both are convenient for rail and air travel as well as for road travel. A further advantage in the case of Manchester (which may also apply to Birmingham) is that property is a good deal cheaper than in the London area.

I suggest that this matter of geographical siting of the new headquarters should be put to members before any decision is taken.

Yours faithfully,

Eccles, Lancs. A. A. H. Moss (G8VF)

The Minimitter MR44 Mark II Receiver

DEAR SIR,—I was interested to read the " Test Report Minimitter MR44-II Receiver " and in particular to note " that only a modest aerial was used during the tests." No indication is given as to what sort of aerial it was. What is a " modest aerial? " Was it just a few feet of wire—and if it was a random length of wire was an ATU employed with link coupling to the receiver so as to ensure 50-80 ohms input to the receiver (as is required according to instruction book)?

It seems a pity Mr. Allen did not try the MR44 on a " normal " aerial—nowadays plain dipoles or trap dipoles (e.g. 8KW) are very popular. Quite possibly, however, he still has the receiver by him and can let us have the results of a quick test on each band with such aerial(s).

Yours faithfully,

Upper Nazing, Essex. T. L. FRANKLIN (G2ARN)

DEAR SIR,—I have read with interest Mr. Franklin's letter in regard to my test report on the Minimitter 44/II receiver and welcome this opportunity of replying to his queries on the conditions under which this test was conducted.

The " modest aerial " which I mentioned was a random length of wire some 50 ft. long plugged straight into the receiver without any matching network. This was intentionally operating the receiver at a disadvantage from the point of view of signal pick-up and the fact that it performed in so satisfactory a manner under these conditions was, in my opinion, to its credit. Not all amateurs, by a long way, have the opportunities of using trap dipoles and other extensive aerial systems and it would be pointless, in my opinion, to write a test report where the performance of the equipment was dependent upon such advantages. If I had been able to test the receiver with an extensive aerial system and in an above average location I would have expected the results to have been even more outstanding, but one would anticipate almost any receiver to exhibit good sensitivity under such circumstances and the test would have lost much of its point.

Replying to the last paragraph of Mr. Franklin's letter, I regret that I no longer have the receiver or such aerials as he describes.

The only point in Mr. Franklin's concern with the performance of the Minimitter receiver with a better aerial system would seem to be not what *improvements* might have been obtained but what unwanted effects, such as cross-modulation, which might thereby have resulted, and in this connection I will say that when checking the efficiency of the i.f. rejection filter I fed a considerable signal into the aerial from a g.d.o. at various frequencies around 1,565 kc/s without producing cross-modulation on any of the bands. There was also no trouble from this cause due to the extremely strong signals from a broadcast and general communications station operating on several frequencies and only a few miles away.

Yours faithfully,

Tunbridge Wells, Kent. W. H. ALLEN (G2UJ)

Two Metre N.B.F.M. Transmitter

DEAR SIR,—With reference to the article by G6TA, entitled " Two Metre N.B.F.M. Transmitter " in the June issue of the BULLETIN, I would like to point out that the circuit described is not original. If you care to read my article " *Crystal Frequency Shifting Circuit, and its Application to F.M. Phone Working* " in the *Short Wave Magazine* for March 1958, you will see an identical system described.

While the article by G6TA may show some originality in describing the complete transmitter circuit, the inference in the text (" the method to be described of obtaining n.b.f.m. with crystal control has not, as far as is known, been given in any of the usual text-books ") is that the f.m. circuit was devised by G6TA. There is no doubt in my mind, from the great similarity in the description of the circuit to that in the *Short Wave Magazine* article, and from G6TA's comments on 2 metres some 18 months ago, when he referred to the *S.W.M.* as the source of his circuit, that his recent description is a copy.

I admit that in the field of journalism, well-known topics have to be repeated in different forms from time to time, to keep them in mind, or for the benefit of newcomers. However, I feel that the topic in question has not been honestly presented, and that due acknowledgment should have been made—the circuit is in fact the G3FMO f.m. circuit, and is not due to G6TA.

I had been inclined to write on an earlier occasion, about another point arising from the same *S.W.M.* article. In your *Technical Topics* section in the February 1961 BULLETIN, variable frequency crystal oscillators are dealt with, and one obtains the impression that all recent progress in this field has taken place in the U.S.A. In fact, if you read the *S.W.M.* article of March 1958 you will see that I proposed the use of a series inductance for frequency shifting on two metres about two years before W3KXI in *QST* (November 1960) and at about the same time as the proposals of W3BWK for the 3500-4000 kc/s band. Let credit be due to both individuals and Britain for originality.

The points raised here suggest that perhaps the publication committee should make closer checks on published work, when reviewing an article for publication.

Yours faithfully,

G. ELLIOTT (G3FMO)

Tilehurst, Reading.

G3VA writes: " G3FMO has apparently read into my comments on the VXO more than I actually wrote. Certainly I did not say that all development work on these circuits was carried out in the United States. There is indeed a respectable literature on " rubber crystals " in both amateur and professional journals stretching back many years. A notable example is the article Stanesby and Fryer " Variable-frequency Crystal Oscillators," *Proc. I.E.E.*, 94, IIIA, 1947 describing the use of parallel reactance. A practical VXO developed by VK2JR (apparently from this article) appeared in *Amateur Radio* in December, 1948 and was reprinted in the BULLETIN during 1949. Nor is the use of series reactance for this application particularly new. An examination of British Patent Specification No. 537167 by L. F. Koerner and S.T.C. shows that the applicants had a clear appreciation of the same basic techniques (and were aware of the effective frequency shifts which could be obtained) as that used by W3BWK and others. The date of this patent is April 30, 1940! "

Amateur Radio and Bingo

DEAR SIR.—In view of the great efforts made nowadays to provide entertainment other than Amateur Radio at meetings might I suggest a good eight hour Bingo session as an alternative?

Yours faithfully,

Martin, Lincoln. C. B. RAITHBY (G8GI).

The European Band Plan and 7 Mc/s

DEAR SIR,—In a letter in the February issue, Mr. Ballinger (G3NAJ) exposes a mentality that is simply shocking. As one of the many amateurs operating mainly on 7 Mc/s, I have been watching how the c.w. part of the band is now regularly used for phone transmissions by radio amateurs, not to mention the various broadcast and commercial stations there.

Several newcomers to our hobby are beginning their activity on 7 Mc/s. I am myself allowed to use 5 watts on c.w. on 7035-7050 kc/s plus v.h.f., crystal controlled only. It is sad to hear how G3NAJ and his fellow phone fans greatly reduce our possibilities. We often have simple receivers and no alternative band. Nowadays the note " lost in phone QRM " is found more and more often in the logs of QRP stations. Without doubt, G3NAJ and his fellows are authorized to operate on other, less crowded bands, without forcing dozens of others to do something else. Although phone may be filtered out to a certain extent, it really doesn't pay to try to compete with several hundred watt phone stations when one has only five watts and maybe just a few crystals available.

One of the arguments that commercial radio people have for further restrictions of amateur activity is that amateurs do not adhere to their regulations. Should the amateurs themselves help these enemies through showing them that they cannot keep even their own agreements?

I am of the opinion that our organizations should do all they can to maintain the rules. If these bad habits are allowed to go on without anything being done about them, our hobby is well on its way towards an anarchy, which not only spoils many QRP contacts, but also diminishes the chances of Amateur Radio at coming radio conferences.

Yours faithfully,

Borgeby 17, Flädie, Sweden. HANS-ERLAND LARSSON (SM7COS).

Third Party Traffic

DEAR SIR,—Having followed for several months the correspondence relating to this subject, I have noticed that all the letters come from U.K. members. I think it is time, therefore, that someone spoke up for those abroad, and in particular for members in the Forces.

I have been approached many times regarding the possibility of relaying messages to parents, etc., in the U.K., but each time I have had to refuse, explaining that I am not allowed to handle personal messages addressed to third parties.

I am sure that I will have the backing of other servicemen amateurs on this question, and if it can be brought to the notice of the G.P.O. by the R.S.G.B. it would undoubtedly be supported by the various Service Societies.

Yours faithfully,

COLIN J. THOMAS (ZC4CT/MP4BDK/MP4MAL/MP4QAU/MP4TAP).

264 Signals Unit,
B.F.P.O. 53.

Maritime Mobile Operation

DEAR SIR,—I am another of the unfortunates mentioned by your correspondent Mr. Bull (G3ICB) in the June issue of the BULLETIN. Being employed as a radio officer in the Merchant Navy, I envy those at home who can go on the air when they have the time or inclination to do so.

As certain other countries do not seem to object to issuing maritime mobile licences to qualified persons on sea-going vessels which operate under their flags, what are the reasons for the continued refusal by the British Post Office for doing so? There is certainly no objection from the shipping companies I have enquired of, so long as the commercial aspect of operating does not suffer.

It may be argued that BCI is the reason, but we amateurs take a pride in clean operating, so much so that most of us do not cause any interference even in our own home, so it is unlikely that we should do so at sea. There is, in fact, no real reason why we should be denied permission to operate from ships. There are a few /MM calls allocated, but these seem to be confined to the Royal Navy. Amateurs in the Merchant Navy don't get a look in.

I support Mr. Bull's plea that the Society, as the official body representing the radio amateur in the United Kingdom, should ask the authorities to look into the question of amateur maritime mobile operation from British ships. The Society has done so much good work for the British amateur, for which he will for ever be indebted but do please see what can be done for those of us at sea. Make the regulations rigid and award severe penalties for breaches of them but do at least give us a sporting chance to take part in Amateur Radio—the greatest hobby of all.

Yours faithfully,

M.V. Onitsha, Lobito, Angola. PAUL F. HUGHES (G3OSR).

(The British Post Office do in fact permit maritime mobile operation on 28 Mc/s and higher frequencies but it is believed that the operating companies have in past years objected to this type of operation on 14 Mc/s from ships of the Merchant Navy—presumably because they fear loss of revenue.—EDITOR).

807 v 6146

DEAR SIR,—Mr. Rayer's statement (September issue) that a pair of 807's should do well for 150 watts has probably been adequately confirmed by now. I have before me an R.C.A. publication which gives the I.C.A.S. rating of the 807 in Class C c.w. operation as 750 volts 100 mA., or 75 watts. The publication bears the legend " Copyright 1936."

I am glad he is discovering early—presumably—in his career that it is expensive rather than efficient to keep up with the latest fashions. I expect that my c.w. transmitter will soon consist of a handful of EF50's followed by an 807. I long ago discovered that an EF50 doubler would drive an 807 red-hot, and that the most fragile portion of an 807 is the screen. I expect to run mine at 100 watts input for some time.

Yours faithfully,

Strathaven, Lanarkshire. JOHN ROSCOE (GM4QK)

A Reflectometer for 145 Mc/s

DEAR SIR,—When reading through this article in the September issue of the BULLETIN, I noticed that I had omitted to refer in the text to the jack socket JK1, shown in the circuit diagram. This jack is, of course, for the purpose of audio monitoring using a normal pair of headphones. It is arranged to break the metering arrangements to avoid unnecessary shunting of the headphones, and to avoid the possibility of erroneous readings taken while headphones are inserted in the jack.

I must apologise for this ommission from the article.

Yours faithfully,

Digswell, Herts. R. C. HILLS, B.Sc.Eng., A.M.Brit.I.R.E. (G3HRH)

Unlicensed Operation

DEAR SIR,—With reference to *Current Comment* for October 1961, I fail to see why the cost of hunting " pirates " can possibly be charged against the Amateur Service. The only link, and even this is theoretical, is that the pirates use the amateur bands. Even this is not always true.

If anything I should imagine that the very fact that Amateur Radio is allowed in the United Kingdom lessens the number of potential pirates. If Amateur Radio was not allowed here, *with the resultant loss in revenue* to the Post Office, I am sure piracy would be far more rampant.

I have always been on the lookout for pirates and have tried various methods of discouraging them, including the obvious course of notifying the Post Office, especially if it involved a pirate illegally using a licensed amateur's call-sign. The only trouble with notifying the authorities is that, like so many " bodies," they merely acknowledge one's letter and that is the last one hears. If, as a result of one's watchfulness a prosecution were made, I am sure it would create more incentive if we were informed in due course. In addition I feel it would be advisable if a definite line of procedure were published in the BULLETIN. I have tried "sitting" on a pirate's frequency and warning fellow amateurs, but I gather this is frowned upon by the authorities because such action has on odd occasions caused the pirate to close down just when an " arrest " was imminent. On the other hand, how are we to know which pirates are under observation and which are not?

I am sure the great majority of readers are willing to assist in cutting down piracy, but there must be a definite plan of action whereby we co-operate with the G.P.O.

In conclusion, I sincerely hope that no-one will ever suggest that licence fees shall be increased for the above mentioned reason, because I am sure many readers would fail, as I do, to see the connection between Amateur Radio and piracy.

Yours faithfully,

Prestatyn, Flintshire. J. P. EVANS (GW8WJ).

Council Proceedings

Résumé of the Minutes of the Proceedings at a Meeting of the Council of the Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Monday, September 25, 1961, at 6 p.m.

Present: The President (Major-General E. S. Cole, in the Chair), Messrs. N. Caws, C. H. L. Edwards, K. E. S. Ellis, R. C. Hills, E. G. Ingram, A. O. Milne, L. E. Newnham, F. K. Parker, F. A. Russell, G. M. C. Stone, P. H. Wade, A. C. Williams, E. W. Yeomanson (Members of the Council) and John Clarricoats (General Secretary).

Apology for Absence: An apology for absence was received from Mr. J. D. Kay.

* * *

Membership

Resolved (i) to elect 102 Corporate Members and 46 Associates; (ii) to grant Corporate membership to nine Associates who had applied for transfer.

Applications for Affiliation

Resolved to grant affiliation to the Burnham-on-Sea Amateur Radio Society, the March and District Radio Amateur Society and the Northern Heights Amateur Radio Society.

Northern V.H.F. Convention

Resolved to appoint Mr. R. C. Hills to represent the Council at the Northern V.H.F. Convention.

O.R.M.'s

Resolved to record (i) that if a Council Member attends an O.R.M. at his own expense he shall, as a matter of courtesy, advise the R.R., but the member in question will not expect to be found a seat on the rostrum; (ii) that if an R.R. asks for a specific member of Council to attend an O.R.M. the request shall be given special consideration by the Council.

Gravesend Trophy

Resolved to accept with thanks an offer made by the Gravesend Radio Society to present a silver trophy for annual competition in connection with National Field Day.

Society Investments

After considering a report from a firm of stock brokers it was *resolved* to instruct the Society's Bankers to give six months' notice to the G.P.O. of the Council's intention to redeem the Society's holding of £3,000 5 per cent Defence Bonds.

G3QAA-G3QZZ Series of Call-Signs

It was reported that in order to avoid any confusion with the International Q code the G.P.O. had decided that call-signs in the series G3QAA-G3QZZ would not be issued.

Project OSCAR

Resolved to seek permission from the G.P.O. to handle OSCAR tracking reports by means of H.F. communication to the U.S.A.

Chart Reader

In connection with the programme of work being undertaken by the Scientific Studies Committee it was *resolved* to authorize the purchase of an Evershed & Vignoles Chart Reader, at a cost of £18 5s. 0d.

Reports of Committees

The Minutes of meetings of the following Committees were submitted as reports:

Mobile	August 23 and September 6, 1961
Membership and Representation	August 28, 1961
Finance and Staff	August 29, 1961
Contests	September 7, 1961
Exhibition	September 8, 1961

Resolved to receive the reports and certain of the recommendations. (The recommendations dealt with the Regional Representatives' Conference; the office of C.R.; car allowances for Council Members: contest awards).

The meeting terminated at 10.05 p.m.

R.A.E.N. Notes and News

By E. ARNOLD MATTHEWS (G3FZW)*

ON Sunday, October 2, Surrey Group was called upon by the County Police to provide a vital communications bridge when important telephone lines went out of action due to flooding by a heavy rainfall. " 999 " call routing was diverted to Guildford Police station and the Raynet link took over at that point.

By co-incidence, the C.C., G3VK, and two other members were at County Police HQ at the time the trouble developed, and the Group was alerted at 11.30 and the Raynet link set up forthwith. Initial reports from the G.P.O. indicated that the trouble would not be cleared until midnight, and a rota of relief operators was organized until after that time. However, the line was mended by 15.30, by which time no " 999 " calls had been handled, and the reliefs were stood down before leaving their homes.

The group was informed that their action had, in fact, enabled police vehicles and men to be released for duties connected with a Royal visit taking place in the district. G3VK's comment that it made the next day's exercise a tame affair sums it all up, and we would like to add our congratulations to those of Surrey Constabulary.

Officers' Meeting at Leeds

Another meeting in the series planned to enable group officers and members of the R.A.E.N. Committee to meet took place at Leeds on October 22 when officers, many of whom had travelled 100 miles, from the north, east and north-west met Dr. A. C. Gee (G2UK), Chairman of the R.A.E.N. Committee, E. Arnold Matthews (G3FZW), Hon. Secretary, and the Zonal Representative, P. H. Wade (G2BPJ). Arrangments for the meeting were made by local A.C., G3NNO.

Opening the meeting, G2UK surveyed R.A.E.N. history and networks in other lands, paying some attention to the problems which arose during development. Reports from group officers then gave an opportunity for discussion of several matters of common interest, and particular attention was given to liaison with user services. G6DN's report on **Manchester** Group was most helpful, as it seemed to sum up police policy to R.A.E.N. and its practical application. **Cheshire** activity seems to be spreading out from the firm base in the Wirral, and an effective county-wide coverage seems likely to be in being shortly. **Co. Durham** and the **North Riding** have some difficulty in effective contact with other counties, but a personal contact at the meeting has materially helped to link these two groups. Locally in **Leeds** the A.C. is recruiting more members, and is doing so by personal contact—which is certainly the best way.

G3FZW's paper dealing with the administrative side of R.A.E.N. was well received, and there was some most interesting discussion on the constitution of R.A.E.N., although one doubts the practicality of the suggestion that organization should be dealt with through the R.S.G.B. scheme of representation!

R.A.E.N. Rally 1961

This contest was again well supported, but a preliminary examination of the logs shows a distinct fall in the standard of message passing—several test phrases lost all semblance of their original wording. Conditions were not too good, but many of the phrases were much easier to pronounce. Some spelling errors were also noticed in quite simple words! The majority of this year's phrases were taken from Dr. F. G. Smith's most interesting book, *Radio Astronomy*.

Personnel

The following Area Controllers have resigned: J. J. L. Weaver (G2HNA), R. A. M. Crust (G3MC) and L. Taylor (G3JMU).

The following have been appointed Acting Area Controllers: S. L. McAteer (G3CKC), 20 Kirkdale Street, Low Moorsley, Hetton-le-Hole, Co. Durham; P. S. M. Carnochan (G3IAO), 21 Grand Avenue, Pakefield, Lowestoft; E. J. Kirby (G3LPX), Bailiff's Cottage, Langley Park Farm, Langley, Maidstone, Kent.

R.A.E.N. Membership Cards

In an emergency the Police may require R.A.E.N. members to produce their membership cards. Carry yours with you—*always*.

* *1 Shortbutts Lane, Lichfield, Staffs.*

Forthcoming Events

Details for inclusion in this feature should be sent to the appropriate Regional Representatives by the 18th of the month preceding publication. T R.s and club secretaries are reminded that the information submitted must include the date, time and venue of the meeting and, whenever possible, details of the lecture or other event being arranged. Regional Representatives are requested to set out the copy, preferably typed double spaced, in the style used below. Standing instructions for more than three months ahead cannot be accepted.

DATES FOR YOUR DIARY

November 22-25.—R.S.G.B. International Radio Hobbies Exhibition, London.
December 16.—A.G.M., London.
May 6, 1962.—South Eastern Counties Mobile Rally.
June 17, 1962.—Longleat Mobile Rally.
June 24, 1962.—Bridlington Mobile Rally and Hamfest.
July 8, 1962.—South Shields Mobile Rally.
August 19, 1962.—Derby Mobile Rally.

REGION 1

Ainsdale (A.R.C.).—Wednesdays, 8 p.m., 37 Hawthorne Grove, Southport.
Blackburn.—Fridays, 8 p.m., West View Hotel, Revidge Road.
Blackpool (B. & F.A.R.S.).—Tuesdays, 8 p.m., Squires Gate Holiday Camp.
Bury (B.R.S.).—December 12 (A.G.M.), 8 p.m., Knowsley Hotel, Kay Gardens.
Chester.—Tuesdays, 8 p.m., Y.M.C.A.
Liverpool (L. & D.A.R.S.).—Tuesdays, 8 p.m., Gladstone Mission Hall, Queens Drive, Stoneycroft.
Macclesfield.—November 24, 28, December 12, 24 Jordongate.
Manchester (M. & D.A.R.S.).—Wednesdays, 7.30 p.m., King George VI Club, North Road, Moston, Manchester, 10. **(S.M.R.C.).**—Fridays, 7.30 p.m., Fallowfield Bowling and Lawn Tennis Club, 81 Wellington Road, Fallowfield, Manchester, 14.
Morecambe.—December 6, 125 Regent Road.
Preston (P.A.R.S.).—November 28, December 12, 7.30 p.m., St. Paul's School, Pole Street.
Southport (S.R.S.).—Thursdays, 8 p.m., The Esplanade.
Stockport (S.R.S.).—November 22, December 6, 20, The Blossoms Hotel, Buxton Road.
Wirral (W.A.R.S.).—November 15, December 6, 20, 7.45 p.m., 15 Balls Road, Claughton, Birkenhead.

REGION 2

Barnsley.—November 24 (Debates on "C.W. *v.* Phone" and "Home-built *v.* Commercial,") December 8 (Construction of 160 metre Transmitter, Part 2), 7.30 p.m., King George Hotel, Peel Street.
Bradford.—November 15 ("Modern Methods of Communication" by E. M. Price, M.Sc.), Fire Service Dept., Nelson Street, November 28 (Junk Sale), December 12 ("The Development of Time Measurement" by W. Barton, F.B.H.I.), 7.30 p.m., 66 Little Horton Lane.
Halifax (Northern Heights A.R.C.).—November 29 ("Converters for 2 and 4" by Mr. Millard, G3OGV), December 13 (Ragchew), 7.30 p.m., Sportsman Inn, Ogden.
Scarborough (S.A.R.S.).—Thursdays, 7.30 p.m., Chapmans Yard, North Street.
Sheffield (S.A.R.C.).—December 13 ("New Receiver" by G. Lyon, G3GJF), Dog and Partridge Hotel, Trippett Lane, Sheffield, 1.

REGION 3

Birmingham (Slade).—November 17, 7.45 p.m., The Church House, High Street, Erdington. **(South).**—November 16, December 14, 7.30 p.m., Friends Insititute, 220 Moseley Road, Birmingham.
Sutton Coldfield.—November 23 (A.G.M.), December 14 (Discussion on Operational Layout of Amateur Transmitting Station), 7.30 p.m., 92 The Parade, Sutton Coldfield.
Stourbridge.—December 5 ("How far can Radio Signals be heard?" by C. S. Bull), 7.45 p.m., Foley College, Stourbridge.
Wolverhampton.—November 20, 27, 8 p.m., Neachells Cottage, Stockwell End, Tettenhall.

REGION 4

Derby (D. & D.A.R.S.).—November 22 (Stereophonic Tape Demonstration by T. Darn G3FGY), November 25 (Annual Outing to Hobbies Exhibition), November 29 (Open Evening), December 6 (Surplus Sale), December 13 (Open Night), December 20 (Annual Christmas Party), 7.30 p.m., Room No. 4, 119 Green Lane, Derby. **(D.S.W.Exp.S.).**—Fridays, 7.30 p.m., Sundays, 10.30 a.m., Club Rooms, Nunsfield House, Boulton Lane, Alvaston.
Grantham (G. & D.A.R.S.).—Mondays, 7.30 p.m., Club Rooms (rear of Manners Arms Hotel), London Road, Grantham.
Grimsby (A.R.S.).—Alternate Thursdays, 8 p.m., R.A.F.A. Headquarters, Abbey Drive West, Grimsby.
Leicester (L.R.S.).—Mondays, 7.30 p.m., Club Rooms, Old Hall Farm, Braunstone Lane, Leicester.
Lincoln (L.S.W.C.).—Fortnighly, Wednesdays, 7.30 p.m., Lincoln Technical College, Cathedral Street, Lincoln.
Melton Mowbray (M.M.A.R.S.).—December 7 (Table Top Transmitter by Ken Atter, and Audio Equipment by Alan Brown), 7.30 p.m., St. John Ambulance Hall, Asfordby Hill, Melton Mowbray.
Nottingham (A.R.C.N.).—Tuesdays and Thursdays, 7.30 p.m., Community Centre, Woodthorpe House, Mansfield Road, Sherwood, Nottingham.
Northampton (N.S.W.C.).—Thursdays, 7 p.m., Allen's Pram Works, 8 Duke Street, Northampton.
Peterborough (P. & D.A.R.S.).—December 1 (Annual Christmas Party), 7.30 p.m., Peterborough Technical College.
Retford & Worksop (N.N.R.C.).—Tuesdays and Thursdays, 7.30 p.m., Club Rooms, Victoria Street, Worksop, Notts.

REGION 5

Cambridge (C. & D.A.R.C.).—Fridays, 7.30 p.m., The Clubroom, Corporation Yard, Victoria Road. Full programme on November 17, December 1, 15.
March (M. & D.A.R.S.).—Tuesdays, 7.30 p.m., Club Room, Police Headquarters, March.
Shefford (S. & D.A.R.S.).—November 23 ("Computing Techniques" by J. Leviston, G3NFB), November 30 (Film Show), 7.30 p.m., Digswell House, Shefford.

REGION 6

Cheltenham.—First Thursday in each month, 8 p.m., Great Western Hotel, Clarence Street.
High Wycombe (Chiltern A.R.C.).—November 30, 8 p.m., British Legion Hall, St. Mary Street, High Wycombe.
Wolverton (W. & D.R.C.).—Fridays, 7.30 p.m., Science and Arts Institute, Church Street.

REGION 7

Acton, Brentford and Chiswick.—November 21 ("Modern Valve Manufacture," by Brian Lockey), 7.30 p.m., A.E.U. Rooms, 66 High Road, Chiswick.
Bexleyheath (N.K.R.S.).—November 23 ("Licensing in other Lands," by P. Windle, G3HVG, and "Top Secret Surprise," by Bill Windle, G8VG), December 14, 8 p.m., Congregational Hall, Bexleyheath, nr. Clock Tower.
Croydon (S.R.C.C.).—December 12, 7.30 p.m., "Blacksmiths Arms," South End, Croydon.
Dorking (D. & D.R.S.).—November 28, 8 p.m., Wheatsheaf, High Street, Dorking.
Ealing.—Sundays, 11 a.m., A.B.C. Restaurant, Ealing Brodway, W.5.
East Ham.—Tuesday fortnightly, 8 p.m., Leigh Road, East Ham.
East London District.—November 19 ("Selenium and Silicon Rectifiers" by Mr. Barker of Standard Telephones and Cables Ltd.), December 17 (A.G.M., followed by talk on "Two Metre Equipment" by T. Withers, G3HGE), 3 p.m., Lambourne Rooms, Town Hall, Ilford.
East Molesey (T.V.A.R.T.S.).—December 6, 8 p.m., Carnarvon Castle Hotel, Hampton Court.
Enfield and District.—November 30 ("Aerials" by R. C. Hills, G3HRH), 7.30 p.m., George Spicer School, Southbury Road, Enfield.
Guildford and District.—November 24 (Film Show), 8 p.m., City Cafe, Onslow Street, Guildford.
Harlow and District.—Tuesdays, 7.30 p.m., rear of G3ERN (G. E. Read), High Street, Harlow.
Holloway (G.R.S.).—Mondays, Tuesdays and Wednesdays (R.A.E. and Morse), 7 p.m., Fridays (Club), 7.30 p.m., Montem School, Hornsey Road, Holloway, N.7.
Ilford.—Thursdays, 8 p.m., 579 High Road, Ilford (near Seven Kings station).
Kingston.—Lectures alternate Thursdays, Theory and Morse Classes weekly, 7.45 p.m., Y.M.C.A., Eden Street, Kingston (Morse at 2 Sunray Avenue, Tolworth).

LONDON MEMBERS' LUNCHEON CLUB

will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road,

at 12.30 p.m. on Friday, November 17 and December 15 (Special Christmas Luncheon)

Telephone table reservations to HOL 7373 prior to day of luncheon. Visiting amateurs especially welcome.

Mitcham (M. & D.R.S.).—Lectures alternate Fridays, 8 p.m., Morse classes 7 p.m., "The Canons," Maderia Road, Mitcham.
New Cross (C.A.R.S.).—Fridays, 7.30 p.m., November 17 (Junk Sale), Sundays, 11.30 a.m., Wednesdays (Morse Practice), 8 p.m., 225 New Cross Road, London, S.E.14.
Norwood and South London (C.P. & D.R.C.).—November 18 (Civil Defence Radio Communication), 8 p.m., Windermere House Annexe, Westow Street, Crystal Palace. December 5, Morse Class at 8 p.m. at G3IIR.
Paddington (P. & D.A.R.S.).—Wednesdays, 7.30 p.m., Beauchamp Lodge, 2 Warwick Crescent, W.2.
Romford (R. & D.A.R.S.).—Tuesdays, 8.15 p.m., R.A.F.A. House, 18 Carlton Road, Romford.
Science Museum (Civil Service R.S.).—November 21 (Informal Meeting and R.S.G.B. Recorded Lecture on "Elements of Radio Valve Theory and Manufacture" by G3DCS), December 5 ("Mercury Batteries" by Dr. Von Donren), 6 p.m., Science Museum, South Kensington.
Sutton and Cheam (S. & C.R.S.).—November 21 ("Mobiling Around" by Frank Fletcher, G2FUX), The Harrow, High Street, Cheam.
Welwyn Garden City.—December 14 (Nomination of T.R. 1962/3, Financial Statement and *Mirror in the Sky*—film), 8 p.m., The Conference Room, Murphy Radio Ltd., Bessemer Road, Welwyn Garden City.

REGION 8

Canterbury (E.K.R.C.).—November 21 (Pre-Radio Hobbies Exhibition meeting). November 28 ("My Station and Radio Activities" by G3LCK). Technical College, Langport, Canterbury.
Crawley (C.A.R.C.).—November 22 (Film Show by H. J. P. Lees), 8 p.m., West Green Centre, Crawley. December 13 (Informal), for details, contact R. G. B. Vaughan (G3FRV), 9 Hawkins Road, Tilgate, Crawley.

REGION 9

Bath.—December 11, 7.30 p.m., Committee Room, Bath Technical College, Lower Borough Walls.

Bideford.—First Thursday in each month, 7.30 p.m., alternately at T. G. Ward (G2FKO), 38 Clovelly Road (Phone: Bideford 964), and D. H. Jones (G3BO), Rosebank, Westcombe (Phone: Bideford 550).

Bristol.—November 17, 7.15 p.m., Carwardine's Restaurant, Baldwin Street, Bristol, 1.

Exeter.—Second Thursday in each month, 8 p.m., Y.M.C.A., St. David's Hill, Exeter.

Falmouth (C.R. & T.C.).—First Wednesday in each month, Y.M.C.A., Falmouth.

Plymouth (P.R.C.).—Tuesdays, 7.30 p.m., Virginia House Settlement, St. Andrews Cross, Plymouth.

Torquay (T.A.R.S.).—Second Saturday in each month, 7.30 p.m., Y.M.C.A., The Castle, Torquay.

Weston-super-Mare.—First Tuesday in each month, 7.15 p.m., Technical College, Lower Church Road, Weston-super-Mare.

Yeovil (Y.A.R.C.).—Wednesdays, 7.30 p.m., Grove House, Preston Road, Yeovil.

REGION 10

Cardiff.—December 11 (Morse, 7 p.m., Quiz and Junk Sale, 7.30 p.m.), T.A. Centre, Park Street, Cardiff.

Penarth.—Last Monday in each month, 7.30 p.m., R.A.F.A. Club, Windsor Road, Penarth.

REGION 11

Conway Valley (C.V.A.R.C.).—December 14 ("My Transmitter" by R. Jones, GW3JI), January 11 (Junk Sale and "Early Days" by an Old Timer), 7.30 p.m., Albert Hotel, Madoc Street, Llandudno.

REGION 13

Edinburgh (L.R.S.).—November 23 ("Medical Electronics Apparatus" by Dr. D. C. Simpson), December 14 (Schoolboys' Night). Venue from T. Simpson (GM3BCD), 118 Braid Road, Edinburgh.

REGION 14

Ayrshire.—Third Sunday in each month, 7.30 p.m., Royal Hotel, Prestwick.

Glasgow.—November 24 (Demonstration of Viceroy Transmitter by GM3AXX), December 8 (Review of Year and Discussion on Future Policy), 7.30 p.m., Woodside Halls, Clarendon Street, N.W. (nr. St. Georges Cross Underground).

Motherwell.—Third Friday in each month, 7.30 p.m., Carfin Hall.

REGION 16

Chelmsford.—First Tuesday in each month, 7.30 p.m., Marconi College, Arbour Lane, Chelmsford.

REGION 17

Southampton.—Second Saturday in each month, 7 p.m., Engineering Lecture Theatre, Lanchester Building, University of Southampton, University Road.

Regional and Club News

Blackwood Amateur Radio Society.—On September 23, the society operated GW3KYA/A at the West Monmouthshire Ranger and Rover Conference. Three hundred visitors travelled from many parts of the country to see an impressive demonstration of what Amateur Radio can do. In four hours of operation 40 stations in Britain and Europe were worked and home constructed and commercial equipment was displayed.

Bristol.—At the well-attended October meeting, Council Member G. M. C. Stone (G3FZL) gave a most interesting talk on the GB3VHF tropospheric propagation experiment. Mr. Stone also gave details of Project OSCAR. The annual contest with the Midland Amateur Radio Society is due to take place on November 19. *Hon. Secretary:* R. L. Shaddick (B.R.S.19727), 2 Shanklin Drive, Filton, Bristol.

Cambridge and District Amateur Radio Club.—The newly acquired clubroom has been redecorated by members and a programme of events is being arranged. Work on the club station, G3PKF, is progressing. Meetings are held in the clubroom at The Corporation Yard, Victoria Road, Cambridge, on Fridays commencing at 7.30 p.m. *Hon. Secretary:* A. H. G. Waton (G3GGJ), "Arkengarthdale," New Road, Barton.

Cannock Chase Amateur Radio Society.—Visitors are most welcome to attend meetings and details may be obtained from the *Hon. Secretary* N. H. Hyde (G3PJM), 91 Pelsall Lane, Rushall, Walsall.

Civil Service Radio Society.—Members operated GB2SM in the recent *CQ* World Wide DX Contest and a comprehensive programme of contest activity is being planned for the coming months. At the meeting on November 21, there will be a recorded lecture on Radio Valve Theory and Manufacture, while on December 5 there will be a talk on mercury batteries by Dr. Van Donren of Deac (G.B.) Ltd. Visitors are always welcome, but should contact Mr. Voller at KENsington 6371 prior to the meeting. Details of membership may be obtained from the *Hon. Secretary* G. Lloyd-Dalton, 2 Honister Heights, Purley.

Cheltenham.—The Group was very active in October with participation in the local Hobbies Exhibition for four days and in preparation for the South Central Regional Meeting. The latter included a visit to Birdlip Radio Station conducted by G3HCB, a business meeting and a talk on Transistor Applications by Mr. Butler. G3IER has completed his 144 Mc/s transmitter-receiver for R.A.E.N. use and has demonstrated it to members. *Town Representative:* John Yeend (G3CGD), 30 St. Lukes Road, Cheltenham.

Cornish Radio and Television Club.—The main topic at the October meeting concerned the arrangements for the setting-up of the station to be operated at Poldhu for the Marconi Sixtieth Anniversary. Visitors included G2AHL and G3BZG. *Hon. Secretary:* W. J. Gilbert, 7 Poltair Road, Penryn.

Crawley.—On November 22 there will be a film show by H. J. P. Lees including *Nerves of the Nation.* Members are engaged in building receivers with the idea of providing first class equipment for contest use. Visitors are always welcome at meetings—see *Forthcoming Events. Hon. Secretary:* R. G. B. Vaughan (G3FRV), 9 Hawkins Road, Tilgate, Crawley.

Derby and District Amateur Radio Society.—On October 8 the 150 watt transportable station built by J. Ballinger (G3NAJ) was officially presented to Group Captain Cheshire, V.C., at the Staunton Harold Home by Mr. J. D. Pearson, Chief Executive of Rolls-Royce, Derby. The station is at present being operated by Dr. Harry Houghton (G3OPY). It is hoped that another resident will pass the Morse Test shortly. *Hon. Secretary:* F. C. Ward (G2CVV), 5 Uplands Avenue, Littleover, Derby.

Dudley Amateur Radio Club. The recently formed Dudley Amateur Radio meets fortnightly at the Dudley Art Gallery. Full details of the current programme can be obtained from the *Hon. Secretary* D. H. W. Pratt (G3MHS), 23-23a Kent Street, Upper Gornal, Dudley, Worcs. The President of the club is A. C. Bevington (G5KS).

East London Group.—Despite foggy weather, about 70 members attended the meeting in Ilford Town Hall on October 15, when Messrs Kirkpatrick and Turner of the G.P.O. gave talks on "The Log and the Licence" and "TVI/BCI" respectively. So many members had questions to ask, the meeting over-ran its allotted time by half an hour. On November 19, Mr. Barker of Standard Telephones and Cables Ltd., will give a talk on "Selenium and Silicon Rectifiers". *District Representative:* M. McBrayne, 25 Purlieu Way, Theydon Bois, Essex.

East Kent Radio Society.—On November 21 there will be a pre-Radio Hobbies Exhibition meeting. On November 28

Dr. Harry Houghton (G3OPY) operating the 150 watt station presented to the Staunton Harold Cheshire Home on October 8, 1961—see the report for the Derby and District Amateur Radio Society.

G3LCK will give a talk on " My Station and Radio Activities." Future meetings at the Technical College will be on December 5 (" Dover Marine Communications " by G3KKF), December 12 and 19. *Hon. Secretary:* D. J. Bradford (G3LCK), 42 Mount Road, Canterbury.

Leicester Radio Society.—At the A.G.M. the following officers were elected: *Chairman:* S. D. Hoff (G3AWM); *Hon. Treasurer:* R. D. McQueen (G3DVP); *Hon. Secretary:* P. G. Goadby (G3MCP), 535 Welford Road, Leicester; *Committee Members:* C. Craythorne (G3PBC), B. J. Matson and J. Lewis. For details of meetings, see *Forthcoming Events.*

London Members' Luncheon Club.—Among the 40 members and visitors at the October meeting were W7BJS, W7TNA, W6NIG, W2BIB, HB9TL and VK3ZJE (now G3PLV). The Special Christmas Luncheon is to be held at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, on December 15, commencing at 12.30 p.m. Tickets, price 12s. 6d. each, may be obtained from the *Hon. Secretary* Frank Fletcher (G2FUX), 11a Ickenham Road, Ruislip.

Macclesfield and District Radio Society.—The following were elected at the A.G.M.: *Chairman:* A. W. Foster (G3GAH); *Vice-Chairman:* Lou Bond (G3LDT). Meetings are held on alternate Tuesdays at 42 Jordangate, Macclesfield, commencing at 8 p.m. On other Tuesdays, special meetings are arranged for the benefit of short wave listeners and include Morse instruction. A series of films has been booked for the winter programme. *Hon. Secretary:* B. Haywood (G3MKR), " Penarth Cottage," 15 Tunnicliffe Street, Macclesfield.

Mitcham and District Radio Society.—December 15 is the Christmas Meeting when activities will include a constructional contest with a presentation of awards and the Christmas Draw. At the meeting on January 12, Dr A. C. Gee (G2UK) will give a talk on " Amateur Radio Teleprinting." Meetings are held at " The Canons," Madeira Road, and commence at 8 p.m. *Hon. Secretary:* M. Pharaoh (G3LCH), 1 Madeira Road, Mitcham.

Newbury and District Amateur Radio Society.—The society is arranging an Operating Contest for members to run from November 1, 1961, to October 31, 1962. Those taking part must enter one or more R.S.G.B. contests, a figure of merit being awarded based on the results published in the R.S.G.B. BULLETIN. When all the results have been published by the R.S.G.B., the winner of the club contest will be declared and a cup awarded. Further details of this novel contest, which might well be copied by other groups and clubs, may be obtained from the *Hon. Secretary* G. T. Allen (G3JTK), 83 Huntsmoor Road, Tadley, Basingstoke.

Northern Heights Amateur Radio Club.—A Junk Sale was held on September 20 in aid of the fund to provide a communications receiver for a patient at the Kenmore Cheshire Home, Cleckheaton. At the meeting to be held on November 29, there will be a lecture on " Convertors for 2 and 4 " by G3OGV. December 13 is Ragchew Night and December 27 " Any Questions?" Meetings which commence at 7.45 p.m. are held at the Sportsman Inn, Ogden, Halifax.

Peterborough and District Radio Society.—An amusing and instructive talk on D/F receivers by Ray Houltby, opened the winter session at the Technical College. Meetings are held on the first Friday in each month and details of future arrangements may be obtained from the *Hon. Secretary* D. Byrne (G3KPO), Jersey House, Eye.

Radio Society of Harrow.—Visitors are cordially invited to attend the meetings held every Friday at 8 p.m., in the Science Laboratory, Roxeth Manor County School, Eastcote Lane. Talks, junk sales and film shows are held fortnightly. Morse practice is given for beginners. *Hon. Secretary:* A. C. W. Biddell (G3GNM), 114 Kingshall Avenue, Kenton, Harrow.

Reading Amateur Radio Club.—November 25 will be a S.W.L.'s evening. All visitors will be welcome. *Hon. Secretary:* R. G. Nash (G3EJA), 9 Holybrook Road, Reading.

Reigate Amateur Transmitting Society.—The film *Surrey N.F.D. 1961*, by G3NDF will be shown at the meeting to be held at The Tower, Redhill, on November 18 at 7.30 p.m. Fifteen-year old member Peter Mellett is now licensed as G3PIJ. *Hon. Secretary:* F. D. Thom (G3NKT), 12 Willow Road, Redhill.

Rotherham Radio Club.—At the first meeting on October 4 a very interesting talk was given by R. Moore on Transistors and Transistorized Equipment, with many examples. Local club secretaries wanting or having exchange visits or lecture dates for 1962 should contact the *Hon. Secretary* J. J. Scarborough, 25 Crawshaw Avenue, Beauchief, Sheffield 8.

South Manchester Radio Club.—At the A.G.M. held on October 6, the following officers were elected: *Chairman*—J. R. Knight; *Vice-Chairman*—J. Elliott; *Hon. Secretary*—M. Barnsley (G3HZM), Greenways, 11 Cemetery Road, Denton; *Committee Members*—F. Nicholls, T. Arden and A. Gillander.

South Dorset Radio Society.—The officers of this newly formed society are P. Dean, G3FNT (*Chairman*), C. E. Biggs, G2TZ (*Hon. Treasurer*) and A. A. Barrett, G5UF (*Hon. Secretary*), 4 Radio Station Houses, Dorchester. Meetings are to be held on the first Friday in each month in Dorchester and Weymouth alternately. Prospective members are cordially invited to contact G5UF for further information.

South Shields and District Amateur Radio Club.—The following were elected at the A.G.M.: *President:* Capt. E. Clarke (G8AO); *Vice-President:* E. Glenwright; *Chairman:* S. Oake (G3GBF); *Vice-Chairman:* K. Sketheway; *Hon. Treasurer:* J. R. Tyzack (G3ELP); *Hon. Secretary:* D. Forster (G3KZZ), 41 Marlborough Street, South Shields. Meetings are held at Trinity House, Laygate, on Fridays and on the last Wednesday of each month. On November 29 there will be a Junk Sale and on December 27 a Film Show.

Stevenage and District Amateur Radio Club.—New premises have been obtained at Sishes End Youth Centre, a site 450 ft. a.s.l. where a Top Band dipole and an eight element 2m Yagi have been erected. All bands from 2m to 160m are in use under members' call-signs. An exhibition station, G3JLA/A, at the Centre's Open Day in October, attracted much attention and was later shown on *Independent Television News* and in the B.B.C.'s *Town and Around* programme. Meetings are held on Fridays, commencing at 7 p.m. Morse classes are being arranged. *Hon. Secretary:* A. E. Latham (G3JLA), 138 Broadwater Crescent, Stevenage.

Tees-side Amateur Radio Club.—The Annual Dinner is to be held on Dec. 9 at the Corporation Hotel, Middlesbrough, and both local amateurs and those outside the Tees-side area will be most welcome. Tickets, price 17s. 6d. each, may be obtained from the Hon. Secretary. Overnight accommodation can be arranged if required. Meetings are held fortnightly at Settlement House, 132 Newport Road, Middlesbrough, on Fridays at 8 p.m. *Hon. Secretary:* A. L. Taylor (G3JMO), 12 Endsleigh Drive, Acklam, Middlesbrough.

Wirral Amateur Radio Society.—At the recent A.G.M. the following officers were elected: *Chairman*—F. N. Kendrick (G3CSG); *Hon. Treasurer*—A. J. Keiller (G3KXR); *Hon. Secretary*—A. Seed (G3FOO), 31 Withert Avenue, Bebington.

Affiliated Societies

THE following are additions to the list of Affiliated Societies published in the August 1961 issue:

Burnham-on-Sea Amateur Radio Club, c/o M. Lillington, 19 St. Mary's Road, Burnham-on-Sea, Somerset.

March & District Radio Amateur Society, c/o R. E. Ludman, Police Headquarters, High Street, March, Cambridgeshire.

Leeds University Union Amateur Radio Society, c/o P. Green, University Union, University Road, Leeds 2, Yorkshire.

Northern Heights Amateur Radio Society, c/o A. Robinson, Candy Cabin, Ogden, Halifax, Yorkshire.

North Notts Amateur Radio Society, c/o E. W. Badger, 20 Tennyson Drive, Worksop, Nottinghamshire.

Paddington & District Amateur Radio Society (G3PAD), c/o N. A. Lambert, 22 Sunderland Terrace, London, W.2.

Royal Signals Amateur Radio Society, c/o Capt. J. E. P. Philp, R. Signals, 12 Rawlinson Road, Catterick Camp, Yorkshire.

* * *

The following are amendments to the list of Affiliated Societies published in the August 1961 issue:

City & Guilds College Radio Society (G5YC), c/o B. N. Perrin, City and Guilds College, South Kensington, London, S.W.7.

Conway Valley Amateur Radio Society, c/o R. Jones, 15 Glyndwr Road, Llysfaen, Colwyn Bay.

Lothians Radio Society. The call-sign of T. Simpson is GM3BCD, not GM3BCO.

South Manchester Radio Club, c/o M. Barnsley (G3HZM), 11 Cemetery Road, Denton, nr. Stockport, Cheshire.

Northern Rhodesia Amateur Radio Society, c/o P. R. Golledge (VQ2W), P.O. Box 332, Kitwe.

Can You Help?

● J. N. Carter (G3OWB), 47 Hurst Park Avenue, Cambridge, who requires information on the ex-A.M. Wavemeter type W.1433?

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TR8.	Tape pre-amp. Record/Playback ...	**16/6**
TR9.	Tape pre-amp. Equaliser	**7/4**
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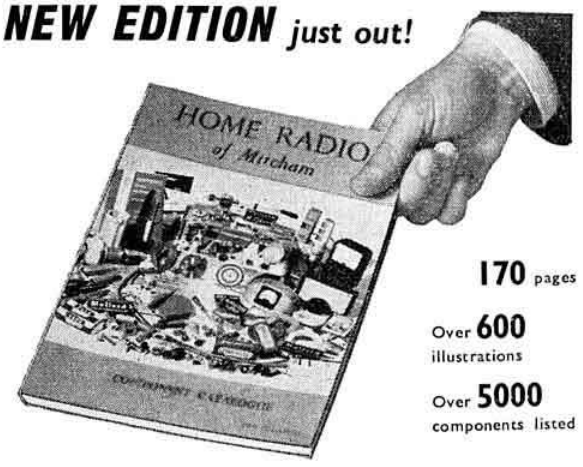

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Candidates, preferably under 41 years of age, should be trained to H.N.C. standard, possess wide knowledge of installation and maintenance of fixed and mobile H.F. and V.H.F. station equipments, low power generating plant and the erection of steel masts and towers. They should be capable of controlling signals workshops and subordinate staff. A knowledge of design draughtsmanship and line and teleprinter practice an advantage.

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