RSGB BULLETIN

NOVEMBER, 1960

VOL. 36, No. 5

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Messrs. Stratton & Co.Ltd.
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Yours faithfully,

G. Courtenay Price
GW2OP

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Volume 36 No. 5

November 1960

2/6 Monthly

R.S.G.B. BULLETIN

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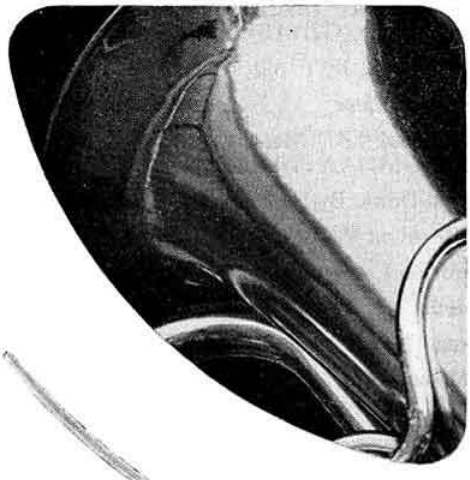
The R.S.G.B. Bulletin is published on or about the 15th of each month as its official Journal by the Radio Society of Great Britain and issued free to members. Closing date for copy is the 22nd of the month preceding publication.

Frequency varies



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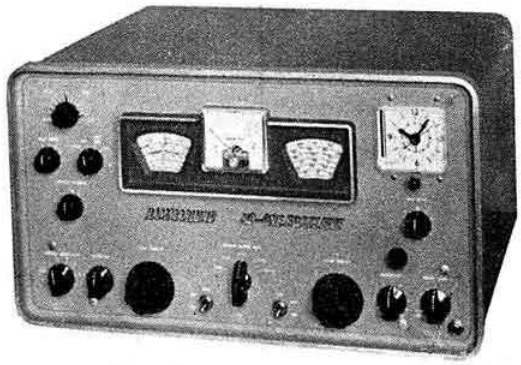

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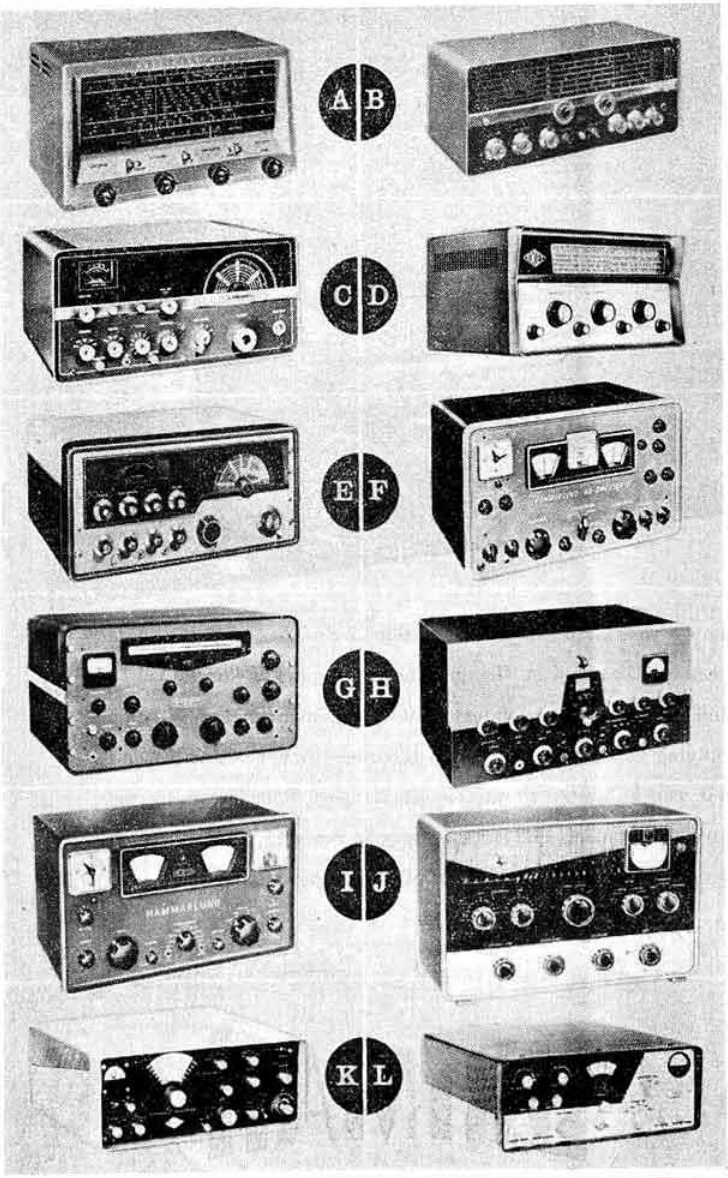

HALLICRAFTERS

HALLICRAFTERS S-38E. (Fig. A)

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Hallicrafters S-38E £28.

HALLICRAFTERS SX-110 (Fig. B)

An entirely new receiver in the medium-price class. General coverage and ham band dials: amateur bands calibrated on slide rule bandspread, scale for accurate reading. Coverage 540 kc/s-34 Mc/s. Crystal filter S meter, antenna trimmer for accurate matching, one RF and two IF stages. Eight valves, 2 watts audio output, 3·2 and 500 ohm outputs The SX-110 is unquestionably the leader in its price range having those features normally found in higher-priced equipment.

Hallicrafters SX-110 £78.

HALLICRAFTERS HT-37 (Fig. C)

The HT-37 is a complete table-top, high-efficiency amateur band transmitter providing SSB, AM or CW on 80, 40, 20, 15 and 10 metres. 144 watts plate input. Carrier suppression down 50 db. Precision VFO. Pi network output for harmonic suppression. Dual range meter for accurate tuning. Perfect CW keying. Voice control system built in. 18 valves. Size 9 in. by 19 in. by 15 in. A high-grade commercial quality transmitter for the amateur. Finest up-to-date styling.

Hallicrafters HT-37 £215.

GONSET G-33 (Fig. D)

This four-band receiver is beautifully styled and is for the short-wave listener and amateur requiring an attractive-looking receiver with functional performance. Coverage 0·54-1·6 Mc/s, 1·6-6 Mc/s, 6-13 Mc/s, 13-34 Mc/s. Bandspread and main tuning are separate slide rule dials. High image rejection. Special vernier tuning with counterweights. Built-in speaker, sensitivity control, antenna trimmer. A first-class general coverage receiver in the medium price range.

Gonset G-33 £44.

HALLICRAFTERS HT-32a (Fig. E)

Considered the most time-proved reliable SSB transmitter on the market by thousands of hams. Undoubtedly it is for the amateur who considers price no object as long as the equipment meets with his complete requirements. The HT 32-A incorporates the exclusive 5 Mc/s crystal filter system, balanced tee bridge modulator, completely temperature stabilized. All modes—SSB, CW, AM and provision for RTTY. High-stability VFO with dial drag compensation. Built-in monitor and many other exclusive features. An outstanding SSB transmitter.

Hallicrafters HT-32A £307.

HAMMARLUND HQ-170E (Fig. F)

An outstanding SSB receiver, used by dozens of British amateurs (we have many testimonials). Triple conversion 3035, 455 and 60 kc/s. Highest possible stability with micro vernier tuning, adjustable bandwidth and the precision front end gives the HQ-170E user complete control over SSB signals. Sensitivity $\frac{1}{2}$ uv on CW, 1 μV on AM. All ham bands 1·8 through to 54 Mc/s. Has every possible feature required by the most critical of amateurs, the HQ-170E gives highest possible performance under every operating condition.

Hammarlund HQ-170E £188.

GONSET GSB-100 (Fig. G)

A first-class SSB transmitter rated at 100 watts input, provides selectable sidebands, phase modulation, amplitude modulation and CW. Quartz crystal carrier notch filter gives carrier suppression to more than 60 db. Audio frequencies above 3500 attenuated for maximum talk power. Pi network output, coverage 80, 40, 20, 15 and 10 metres. VOX, long slide rule dial showing only band in use. Certainly a really versatile transmitter incorporating many fine features.

Gonset GSB-100 £240.

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JOHNSON VIKING II-CDC (Fig. H)

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HAMMARLUND HQ-145E (Fig. I)

General coverage with dual conversion 540 Kc/s to 30 Mc/s in four continuous tuning ranges with additional fifth 20-metre amateur band for world-wide reception in this popular ham band, other ham bands fully bandspread. Exceptional signal to noise ratio, adjustable selectivity, precision variable ± 2 kc/s BFO with high stability for SSB and CW. Adjustable slot filters giving up to 60 db attenuation on adjacent interference. One of the finest general-coverage receivers on the market today. **Hammarlund HQ-145E £137.**

JOHNSON 6N2 (Fig. J)

Two-metre VHF transmitter, 150 watts CW, 100 watts phone. Requires 6·3 v. at 3·5 amps, 300 v. at 70 ma, 300-700 v. at 200 ma and 30 or more watts of audio. 8 to 9 Mc/s crystals are used in a pentode oscillator. Line-up 6U8 osc/dblr, 6U8 tripler, 6360 tripler driver 8894 final 6AQ5 clamper. High efficiency is obtained by use of silver-plated balanced tank circuits with parallel lines. Also bandswitching to 6 metres. Precision engineering and modern techniques makes the 6N2 a first-class piece of equipment. TVI suppressed.
Johnson 6N2, Kit £64, Wired, £83.

GONSET G-76 (Fig. K)

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GONSET MSB-1 (Fig. L)

Mobile SSB Transceiver. 120 watts PEP. Compact . . . mounts easily under dash. Upper and lower sidebands and CW (not AM) . . . VFO . . . VOX . . . push to talk. Receiver sensitivity better than 1 microvolt. Transistorized 12-volt D.C. power supply. A.C. supply available. Also makes an ideal complete station where operating space is limited. The MSB less power supply weighs only 15 lb. and measures 5 in. by 12 in. by 12 in. Compared with other higher-priced similar equipment the Gonset MSB-1 offers just as much and for so much less.
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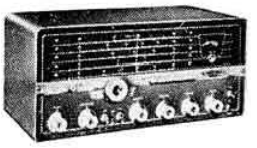

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Current Comment

discusses topics of the day

Publications

IT has become almost traditional for a new edition of the *R.S.G.B. Amateur Radio Call Book* to be published on the opening day of the Society's Radio Hobbies Exhibition.

The 1961 edition will be larger than any of its predecessors, for not only will it reflect more than 1,000 changes of address during the past year (it seems radio amateurs must be nomadic!) but it will list nearly 600 new calls issued to those who successfully passed the Radio Amateurs' Examination and took the G.P.O. Morse Test during recent months. As members will appreciate, the work of keeping up to date such an exhaustive directory of Amateur Radio stations in the British Isles and the Republic of Ireland is no easy task. The *Call Book* is a must in every shack.

The first edition of the Society's *Service Valves Equivalents* has been out of print for some years but while it was available it showed quite clearly that the radio amateur and home constructor was in need of an inexpensive guide to the identification systems employed by the Services. It is well known that the independent numbering of valves and semiconductors by the Army, Navy and Air Force has ended and all are now given a CV (Common Valve) number. The new system is certainly more straightforward but to the amateur completely incomprehensible without some easily understood reference. To meet this need, an entirely new edition of *Service Valves Equivalents* has been compiled by Mr. G. C. Fox, A.M.I.E.E., G3AEX (a member of the Society's Technical Committee and Technical Development Sub-Committee) who has been able to refer to the Ministry of Aviation official list of CV numbers in preparing the very extensive tables of equivalents of valves, cathode ray tubes and semi-conductor devices. At the same time the opportunity has been taken to include an indication of the class of valve or semiconductor. Although the main tables now refer to CV types most likely to be used by amateurs, the commercial equivalents of British Army, Royal Navy, Royal Air Force and U.S. Signal Corps valves and tubes are also included. Like the *Call Book*, the new edition of *S.V.E.* is to be published on November 23.

In line with the Society's policy of supplying members with specialist information at reasonable prices, two other publications are also in active preparation.

For those studying for the R.A.E., there is the *Radio Amateurs' Examination Manual* which has been prepared by Mr. B. W. F. Mainprise, B.Sc. (G5MP). This book, to be published in the early months of 1961, will be in the same format as *The Guide to Amateur Radio* and will give useful advice to students.

Also in preparation for the newcomer to Amateur Radio is a revised second edition of *The Morse Code for Radio Amateurs* by Margaret Mills (G3ACC). Since it was published in 1957 the first edition (now out of print) has been bought in thousands by those requiring guidance in learning the Code.

News

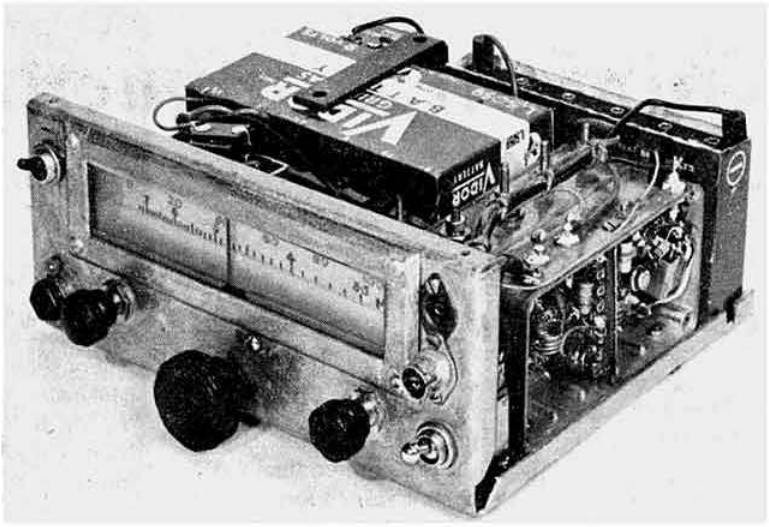
SINCE the inauguration of the R.S.G.B. News Bulletin Service from GB2RS on September 25, 1955, it has been steadily expanded. In fact, by its fifth aniversary the Service had grown from a single transmission to five on 80m and five on 2m each Sunday morning.

In spite of this comprehensive plan, reception in the northern part of Scotland has not always been satisfactory. On November 6, 1960, however, with the agreement of the Post Office, the 80m Service was extended still further by the addition of a Sunday noon time transmission from the Aberdeen area.

Those who listen each week probably seldom give much thought to the effort which goes into the preparation of the bulletins and the operation of the Service. They may be somewhat surprised to learn therefore that each Sunday's transmissions involve a minimum of 10 people—Headquarters staff who prepare the script, the Post Office representative who vets it before transmission and the operators of GB2RS. Equally important are those who contribute items for inclusion in the bulletins —local R.S.G.B. representatives, club secretaries, the writers of BULLETIN commentaries and individual members. All play their part in giving members up-to-date information on Amateur Radio every Sunday morning.

Transistors in the Two Metre Receiver

By N. COUPE (G3KBS) *



The transistorized 144 Mc/s receiver described by G3KBS.

SOME months ago an advertisement announcing the availability in this country of the 2N502 transistor, which is capable of 12db gain at 144 Mc/s, prompted the writer to try transistors in all stages of a 144 Mc/s portable receiver then under construction. The immediate advantage appeared to be that the h.t. power supply converter could be turned off during listening periods, resulting in a useful reduction in drain from the station accumulator. However, this advantage must be paid for by an increase in the receiver noise factor. The 2N502 has a noise factor of around 9db at 144 Mc/s, although other types are becoming available with factors of 5db or even better.

The simple receiver to be described was built and the results have been encouraging. It must be appreciated that the circuit values given are not necessarily the optimum for any particular set of transistors.

Circuit Description

The circuit of the converter section is shown in Fig. 1. Three transistors only are used, this being a compromise between performance and economy as v.h.f. types still tend to be rather expensive. Tr1 (2N502) operates as an earthed emitter neutralized r.f. amplifier while L1, L2 comprise the input tuned circuit. The 72 ohm aerial cable is tapped down L1 to give a 1 : 1 ratio with the isolating winding L2 feeding the base of Tr1, the impedance of which is approximately 70 ohms. From the standpoint of power transfer there is no advantage in tuning the base circuit but it does provide some selectivity and a higher impedance across which to connect the protection diode CR1. The latter is intended to protect Tr1 when the converter is used in conjunction with a transmitter as the base-emitter junction can be easily destroyed if overdriven. Emitter bias is obtained from a separate bias battery. The potentiometer method of bias stabilization may be used but is rather less flexible and requires three more components.

L3, L4 provide a step-down transformer coupling to the base of the mixer (Tr2), a 2N499 connected as an earthed emitter arrangement with oscillator injection in series with the emitter. The 2N499 is not recommended as an amplifier above 100 Mc/s, and the more expensive 2N502 gives a better performance in this stage; the modified mixer circuit for this type of transistor is given in Fig. 2. Due to the low output

* 24 Douglas Crescent, Dunstable, Beds.

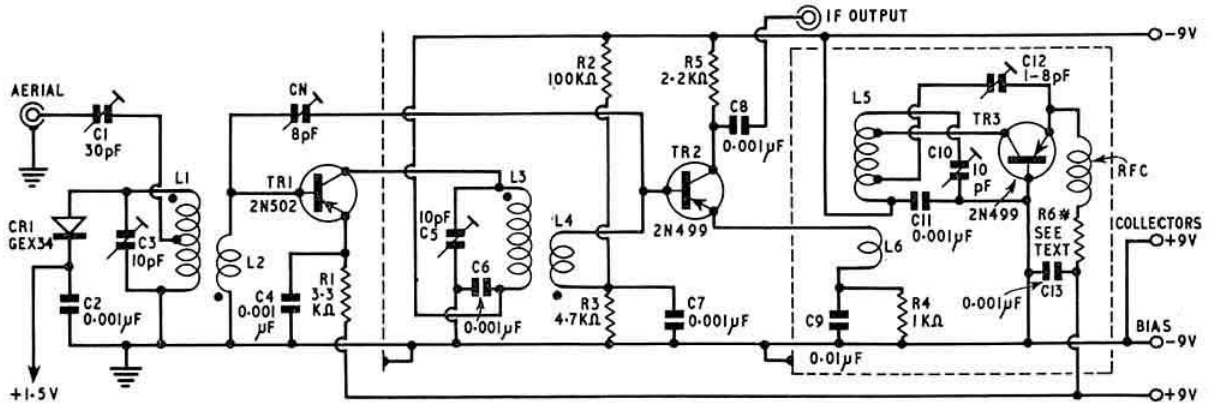


Fig. 1. Circuit of the 144 Mc/s converter. The transistors are available from Semiconductors, Ltd., Swindon, Wilts.

impedance of the mixer there is no advantage in tuning the collector circuit provided the connection to the i.f. section is reasonably short. A standing collector current is provided by the bias network R2, R3 and R4.

The local oscillator Tr3 (2N499) operates directly on the

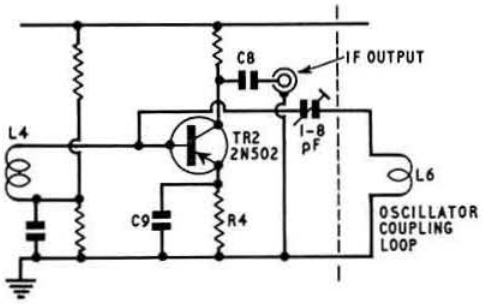


Fig. 2. An alternative mixer circuit for the converter section using a type 2N502 transistor. This arrangement gives improved results but was found to be more critical of oscillator injection for best performance. The alternative base injection method shown allows more convenient control of injection.

final injection frequency. It is connected in the earthed base mode, with C12 controlling feedback, while the value of R6 determines the current operating point. There is no reason why the oscillator should not be made tunable but the fixed tuned arrangement was chosen as it lends itself more readily to replacement at a later date by a crystal controlled oscillator chain.

Construction

No detailed constructional layout is offered as this is not critical provided normal v.h.f. practice is followed. In fact the transistor impedances are so low that the risk of trouble from unwanted feedback is negligible. However,the base and collector circuits of the r.f. stage should be screened from each other and it is desirable that the oscillator be built in a screened compartment. Coils L3 and L4 should be connected as shown in Fig. 1 in order that the neutralizing capacitor CN should have the desired effect. The dot indicates the start or top of each winding.

The connection between the emitter of Tr2 and the oscillator coupling coil L6 should be kept very short, since the emitter return including L6 is effectively in series with the signal input and the base.

The coils should be wound as follows:

L1: 4 turns 18 s.w.g., $\frac{5}{16}$ in. inside diameter, centre tapped, $\frac{5}{8}$ in. long.
L2: 1 turn 22 s.w.g. p.v.c. covered, interwound at earthy end of L1.
L3: 4 turns 18 s.w.g., $\frac{5}{16}$ in. diameter, $\frac{5}{8}$ in. long.
L4: 2 turns 22 s.w.g. p.v.c. covered, interwound at earthy end of L3.
L5: $2\frac{1}{2}$ turns 18 s.w.g. on $\frac{5}{8}$ in. ceramic former, spaced $\frac{1}{16}$ in. between turns. Tapped at 1 turn and 2 turns from top.
L6: 1 turn 18 s.w.g. $\frac{3}{16}$ in. from earthy end of L5.
R.F.C. 26 s.w.g. wound to fill a high value $\frac{1}{2}$ watt insulated resistor.

All variable capacitors may conveniently be 30 pF miniature air-spaced pre-sets with vanes removed as required.

Adjustment

The oscillator should be adjusted first. Set C12 to near minimum capacity and fit a 3·9 K ohm resistor in series with a 10 K ohm variable resistor in place of R6 in Fig. 1. Measure the collector current and adjust the 10 K ohm variable to give a current of $1\frac{1}{2}$ to 2 mA. Now check the oscillator by means of a g.d.o., a sensitive wavemeter or suitable receiver, and set L5, C10 to 140 Mc/s (assuming an i.f. tuning range of 4-6 Mc/s is chosen).

In the event of the oscillator not functioning, try adjusting C12, other values of collector current up to 3 mA and the position of the taps on L5. The collector is tapped down the oscillator coil in the interest of stability; it is not essential for the functioning of the circuit.

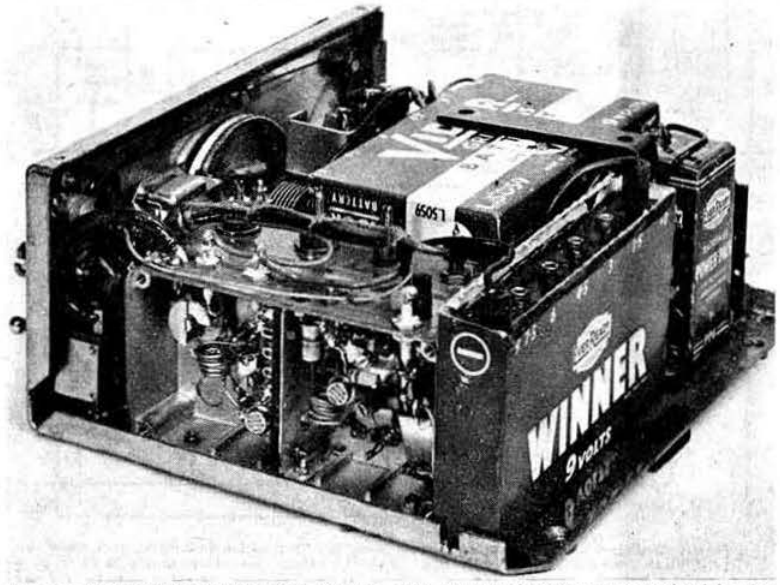
Next measure the collector current of Tr2 with the oscillator out of action, and check that it is of the order of 150 μA. If not, adjust R2. With the oscillator connected, the mixer current should rise to about 300 μA; the amount of drive can be controlled by varying the position of L6 relative to L5. Individual transistors in this stage may require other values of oscillator injection and standing current for optimum performance.

The r.f. circuits in L1, C3 and L3, C5, and C1, can now be peaked with a suitable signal or noise source. It is unlikely that the r.f. stage will oscillate even if CN is well away from its correct setting but an approximate setting can be found by adjusting CN for minimum oscillator pulling when the aerial circuit is disturbed.

With a stable signal being received, the local oscillator current and the setting of C12 should be adjusted for best note and short term stability consistent with adequate mixer injection, after which a fixed resistor can be fitted as R6 equal to the value found to give the best results.

Compared with a valve oscillator operating at the same frequency, the transistor version gives a better note, similar short term stability and much less " warming up " drift.

A 9 volt collector supply is suggested as



Another view of the transistorized receiver. The front end stages are contained in the diecast box in the left foreground.

this size battery is readily available (e.g., Ever Ready PP6), but a 10 or 12 volt supply could be used. It should be noted that the bias battery must supply current approximately equal to the collector current, so choose a battery of similar capacity to that used for the collector supply.

The Tunable I.F.

In order to retain the power supply economy advantage it is desirable that the tunable i.f. or main receiver should also use transistors throughout, and those contemplating the construction of the converter will probably have such an arrangement already available. However, some suggestions and a brief outline of the writer's arrangement may be of interest. Fig. 3 shows the circuit used. The tuning range covers 4-6 Mc/s, and this relatively low first i.f. permits the use of less expensive transistors in the first stages, besides being clear of powerful broadcast stations likely to give trouble from breakthrough.

The second i.f. and audio stages can be based very conveniently, with a saving of time and effort, on one of the excellent medium wave broadcast transistor receiver kits now available. This is the section in Fig. 3 to the right of the dashed vertical lines—the circuit detail shown is representative only. Modifications necessary to such a receiver involve changing the mixer/oscillator transistor Tr2 to one capable of functioning efficiently in the first i.f. An SB344 is suitable, but as its safe maximum collector supply is about 4½ volts, R4 should be adjusted so that this value is not exceeded. The original oscillator coil L7, L8 should be rewound or replaced in order to cover the new oscillator tuning range. The number of turns on the oscillator coil and the value of the padding capacitor C9 shown on Fig. 3 apply to a Teletron coil, FTO2, and a second i.f. of 315 kc/s. The now more common i.f. of 470 kc/s would give better protection against image breakthrough. The damping resistor R5 across the oscillator coil is adjusted for best mixer performance across the band, and may not be necessary.

Referring to the left hand section of Fig. 3, Tr1 (SB344) is a straightforward earthed emitter amplifier covering 4-6 Mc/s. One stage at least at the first i.f. is necessary both for reasons of image rejection and of gain, control of which is provided by R3 in series with the emitter bias supply. Coils L1, L2, L3 and L4, L5, L6 are Denco range three " green " coils, intended for t.r.f. valve receivers. They are wound on ⅜ in. slug tuned formers with six pins which plug into B9A holders, and, with two coupled windings in addition to the tuned windings, are ideal for this purpose. It may be necessary to remove turns from the tuned windings in order to reach 6 Mc/s, depending on the minimum capacity of the tuning capacitor. L3 and L6 should be reduced to about six turns.

Tr3 is the b.f.o. The coil is a Repanco XO15 subminiature pot cored unit, while the value of 2600 pF for C10 applies to a frequency of 315 kc/s, but, by alteration to C10 only, this circuit will cover any i.f. up to 1·5 Mc/s.

(*Continued on page 209*)

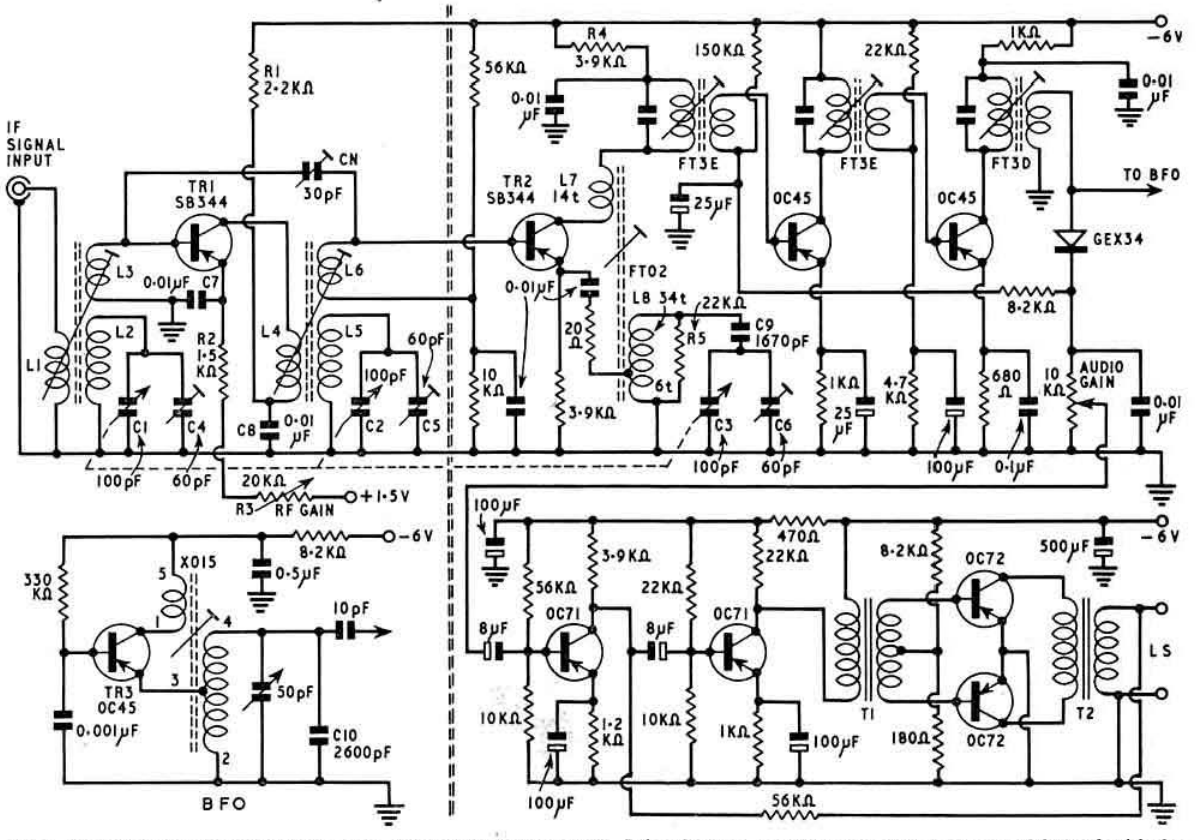


Fig. 3. Circuit arrangement of the tunable i.f. used with the converter. It is, of course, a one band receiver in its own right, and, with the 100 pF tuning capacitor, can be made to cover 3·5 to 7 Mc/s. The section to the right of the dashed vertical lines can conveniently be filled by a medium wave broadcast receiver with modified mixer/oscillator stage. Detail is not important, but at least two i.f. stages are necessary and not less than 250 mW audio output. For completeness the part numbers of the i.f. transformers in this particular arrangement are given. They are Teletron components, as is the oscillator coil. Inset is the b.f.o. which will cater for i.f.s. from 315 kc/s to over 1 Mc/s. The coil is a Repanco XO15 unit.

Communication Receiver Design Considerations

Part 5.–Circuit Details

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

EARLIER articles in this series have described the circuits necessary for the satisfactory r.f. amplification, selection and demodulation of radio signals, However, before the a.f. output from the detector is fed to the audio amplifier stages feeding the loudspeaker or headphones, steps must be taken to limit the effects of unwanted noise.

Noise Limiter

A well known and very effective noise limiter is the type used in the R.C.A. AR88 receiver. This is the Dickerts combined series and shunt limiter using a 6AL5 double diode, the basic circuit of which is shown in Fig. 34. When the potentiometer R1 is set to the minimum position (slider at the top) limiting begins at 100 per cent modulation. As

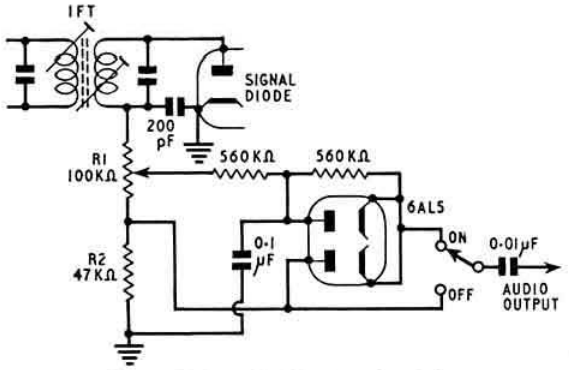


Fig. 34. Dickert self-following noise limiter.

the slider is moved towards R2, the threshold is advanced to obtain limiting action at any desired modulation level. The diode current flows back to earth through the anode load and produces a negative going potential gradient across R1 and R2. The position of the slider of R1 will therefore determine the voltage between the series limiting diode anode and cathode and therefore the point at which limiting occurs. Any change in signal strength will affect the total potential difference across R1 and R2 but will not alter the relative proportions affecting the diode action. Because of this the limiter is self-following. If set at say 80 per cent modulation it will continue to limit at this level whether the signal is S9 plus or S2.

This limiter really does work in a most satisfactory manner. Unfortunately it cannot be used with any other type of detector (for instance an infinite impedance type) because the required automatic following potential gradient does not exist. A further consideration is the fact that during s.s.b. reception there is no signal carrier to act as an input reference level. In addition, the chosen demodulator might be a high impedance type, such as a thermionic diode or infinite impedance detector, or it might be a low impedance type, such as a modified shunt ring modulator. As the preferred method is to use two separate and dissimilar demodulators, selected by a switch for a.m. or sideband reception, it is advisable not to tie in the limiter with the detector circuitry.

The effective suppression of impulse noise is to a large extent dependant on the receiver bandwidth. As the bandwidth is made smaller the duration of the noise pulse becomes a greater proportion of the whole. For this reason noise limiting in a highly selective communication receiver using narrow bandpass filters will never appear to be wholly effective.

Because of the need for two separate demodulators the noise limiter should be in the common audio feed line immediately following the s.s.b./a.m. selector switch. The audio output at this point is made up of complete sine waves and the interfering noise pulses are on both positive and negative half cycles. The diagram in Fig. 35 shows the signal and the noise displayed on an oscilloscope connected to the output valve grid with the receiver tuned to a signal close to the Loran frequency on the 160m band. It will be noted that the noise amplitude is very much greater than the signal; in fact, under these conditions the signal would be unreadable. If a series diode is placed between the output from the demodulator and the input to the first audio amplifier, it can be made to cease conducting at any required level by a delay bias fed from a variable control. This bias can be set so that the diode conducts up to the level of the audio peak and at that point limits or clips off any stronger noise pulses. Naturally, this will limit on one half cycle only but if the first diode is followed by a second diode with the anode and cathode reversed so that the audio signal flows through the valve in the opposite direction, clipping will be effected on both positive and negative audio half cycles. This arrangement is shown in Fig. 36.

The value given of 56 K ohms for the resistor at the

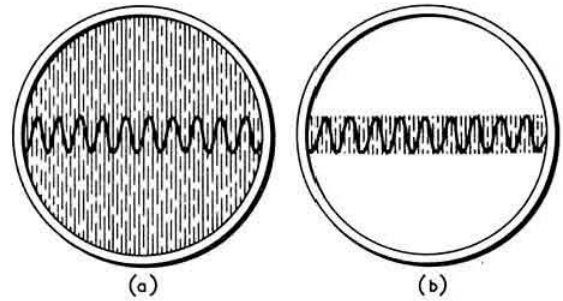


Fig. 35. (a) Oscilloscope trace of signal and noise, without limiter. (b) Oscilloscope trace of same signal with positive and negative peak limiter.

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Previous articles in this series appeared in the July, August, September and October, 1960, issues of the R.S.G.B. BULLETIN. *Copies are available price 2/6 each from R.S.G.B. Headquarters.*

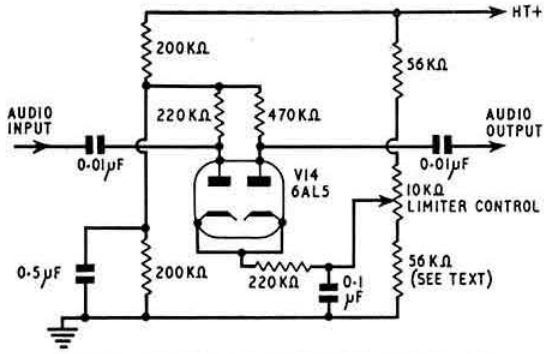


Fig. 36. Negative and positive clipping noise limiter.

earth end of the 10 K potentiometer is an average value and will depend on the potential available from the h.t. supply. It is easily found by substituting a 100 K ohm variable resistor (a 100 K ohm potentiometer), setting the limiter control to two-thirds of its maximum rotation and increasing the value of the 100 K ohm resistor from zero until the limiter valve completely clips the audio input. Without disturbing the setting, it is then removed and the resistance value measured with a test meter. This value is then made up with one or more fixed resistors and permanently wired into position.

As the limiter is not an automatic following type but has to be manually set, it might be thought that the clipping level would change with changes in signal strength caused by fading. In practice this is not so. The audio output is held at an almost constant level by the flat a.g.c. characteristic and is independent of changes in input strength over a very wide range. The effectiveness of the limiting action can be seen on the second diagram of the oscilloscope trace in Fig. 35. These are actual traces taken on the writer's receiver under identical input signal and noise conditions and the only adjustment made was to the noise limiter panel control.

Audio Stages

Gain requirement in the audio section is basically dependent on two factors—the voltage output from the demodulator and the required grid drive to the output valve. A double triode of the 12AT7 class is very convenient in practice. It takes up no more space and requires no more current than a single high gain audio pentode. The increased voltage amplification enables negative feedback to be used throughout all the audio stages, with its obvious advantages, and the overall gain can be adjusted by alteration to the value of the feedback resistor to suit the output of the demodulator so that at full volume control setting the output valve is just within the point of positive grid excursion.

Considerations determining the choice of output *power* were dealt with in Part 2. The preferred circuit arrangement is shown in Fig. 37.

It will be noted that the bias for the output valve is taken from a potential divider across the negative bias supply. This has the advantage of effectively increasing the screen and the anode potential by 11 or 12 volts and is worth while as an improvement to the output valve linearity when the main h.t. supply is lower than normal.

Calibration Oscillator

Calibration oscillator requirements are relatively simple. In theory a 100 kc/s quartz crystal and a small r.f. pentode with plenty of grid current to take the operating point well into the class C region and produce an output rich in harmonics is all that is necessary. The practical difficulty is to get the crystal to oscillate—100 kc/s bars are notoriously sluggish although it is possible to make them work very well

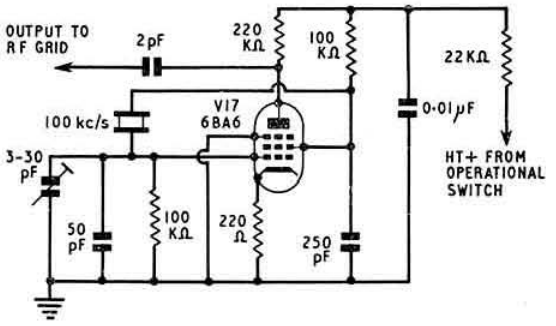


Fig. 38. Calibration oscillator.

in the usual arrangement of crystal between grid and earth and a tuned circuit in the anode (grid 2 used as anode). The main difficulty lies in the size of the required inductance—about 500 millihenries which even on a pot core is quite bulky. However, the arrangement shown in Fig. 38 does not need a coil but it works very well. It is a modification of a not very well known arrangement of the Colpitts circuit described by Edward A. Fielding in the *Proceedings of the R.S.G.B.*, Spring 1948.

Output is taken through a very small fixed capacity to the r.f. valve grid. The small value of the capacitor reduces the amplitude of the lower harmonics where the oscillator output would be higher. A limiting resistance is included in the cathode to protect the valve if the crystal ever fails to oscillate. The Philips 3-30 pF trimmer is adjusted to pull the crystal to zero beat MSF on 5·0 Mc/s. Calibration pips will then be available every 100 kc/s right up to the highest range of the receiver with a very high degree of accuracy.

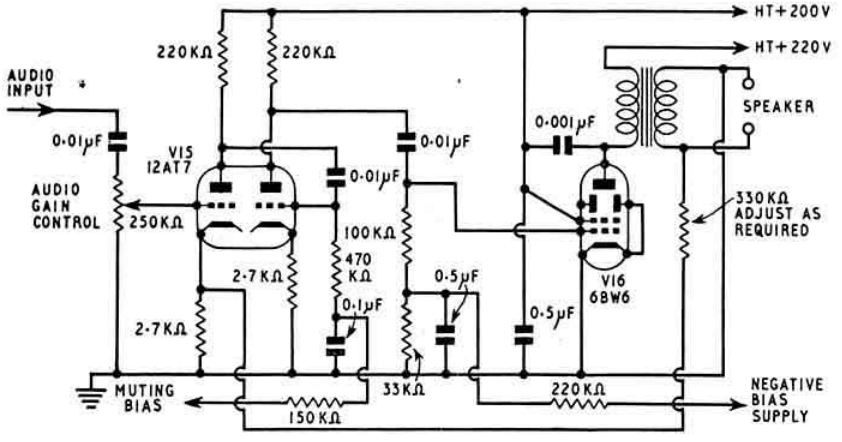


Fig. 37. Audio amplifier and output stage.

Bias and Power Supplies

There are advantages in using a lower high tension supply than normal in a multi-valve high performance receiver. With 200 volts instead of the usual 250 volts there is greater stability of valve characteristics and less shot noise. The heat dissipation in the cabinet is lower and there is a greater safety margin for the electrolytic smoothing capacitors. Further, if a standard 300-0-300 volt mains transformer is used with choke input to the rectifier the smoothed output voltage will be the required value, the regulation will be improved and the transformer will be running within its usual ratings. It is for this reason that the required negative bias supply should not be obtained across a common resistance in the main h.t. negative return path but from a separate small transformer with its own rectifier and smoothing network. The suggested circuit arrangement is shown in Fig. 39. The resistance R2 and the potentiometer VR1 are part of the a.g.c. circuitry shown in Fig. 26. They have been included in the power supply circuit to show the complete return path for the negative bias from the rectifier back to earth.

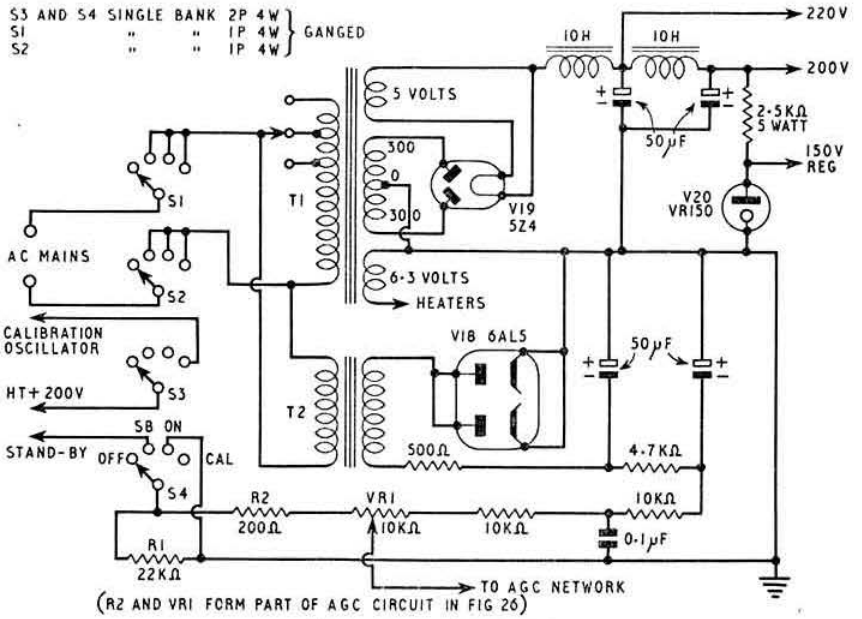


Fig. 39. Power and bias supply.

In the standby position of the operational switch the additional voltage drop across R1 increases the bias on the a.g.c. feed line and takes the r.f. and i.f. controlled stages to " cut off " and at the same time increases the supply to the output valve grid and reduces its standing current to approximately 20 mA. This relieves the load on the mains transformer during non-operational periods.

The transformer T2 can be a push pull audio output transformer (such as the Ferranti type OPM.1. (c)). The mains is connected to the secondary and the output taken from half of the primary. The voltage output—115 volts a.c. —is more than is necessary but as this type of transformer was available it was used. It runs quite cool and has now been in use in this application for more than two years.

Conclusion

All the Amateur Radio handbooks have chapters dealing with some aspects of receiver construction. It is, however, inevitable that the information given is very generalized, covering as it does the vast field between a simple converter and the requirements for a multi-valve receiver. Because of the time delay involved in compiling the information, in editing, in printing and in publishing a Handbook much of the information is already behind accepted practice and to a large extent out of date before it reaches the reader.

Double frequency changing with crystal control of the signal frequency conversion and a tunable first intermediate frequency section is now considered essential to meet fully present day receiving requirements. The design considerations are of necessity a compromise—a decision in regard to one part of the receiver will effect the final choice in some other part, and this in turn may involve changes in one or more following stages.

The first step in receiver construction is to draw out the block diagram of the proposed line-up showing each stage, the frequency range it is to cover and the valve that is going to be used. This block diagram will be determined by the individual requirements in the light of all the relevant factors that will affect the receiver performance. These factors have been considered in Parts 1 and 2. The next step is to complete the block plan by filling in the circuit detail required and finally to draw the complete working circuit diagram. This detail has been given in Parts 3, 4 and 5. It will be seen that if the diagrams of Figs. 13, 14, 20, 23, 26, 30, 31, 36, 37, 38 and 39 are joined together in order, they form the circuit diagram of a complete 20 valve selectable sideband communication receiver.

A commercially made receiver to the specification that has been given would be priced at possibly £400. It can be constructed at home for a fraction of this amount.

The writer has attempted to put forward all factors without bias and to come to final decisions in regard to preferred circuitry only from the point of view of the best possible receiver performance. It is, however, clearly realized that many amateurs will have their own pet ideas and are very likely to incorporate them into any new receiver construction as " modifications " or " improvements." This is all to the good. A manufacturer will not put *your* individual requirements into a receiver—the only way then is to put them there by building it yourself.

Constructional details of how G2DAF built such a receiver to his own requirements will be given in a later article. *(Concluded)*

Two Metre Receiver **(Continued from page 206)**

Results

The complete receiver in the form outlined has given satisfactory service for several months now, both at the home station and under portable conditions. Due to the relatively high noise factor of the r.f. stage the receiver is slightly less lively than its valve counterpart, but used in conjunction with a 15 watt input transmitter, at least as many signals can be heard as can be worked. Under mobile conditions the need is felt for a crystal controlled first oscillator but at the time of writing this is as yet incomplete.

The 5A Special Aerial

By F. VITRINGA (ex-5A5TO)

THE aerial to be described was evolved primarily to fulfil the need for an aerial of the cubical quad type without the problems usually associated with that type of array. Amateurs like the author who are situate in remote places, experience particular difficulty in the erection of aerials, and disadvantages of immediate concern were (i) the flimsiness of construction of the usual type of quad, (ii) the need for special materials, and (iii) the usual necessity to have multiple or special feeder cables not often readily available. The design illustrated in Fig. 1 eliminates these disadvantages, is economical to build and has given surprisingly good results, the author having worked nearly 200 countries, all States and 39 zones in the course of a year using a power of up to 140 watts. As the aerial is guyed from the top it is stable in wind, and as the ends of the spreaders are supported it should be able to withstand sleet or snow conditions, which obviously have not been experienced in Libya.

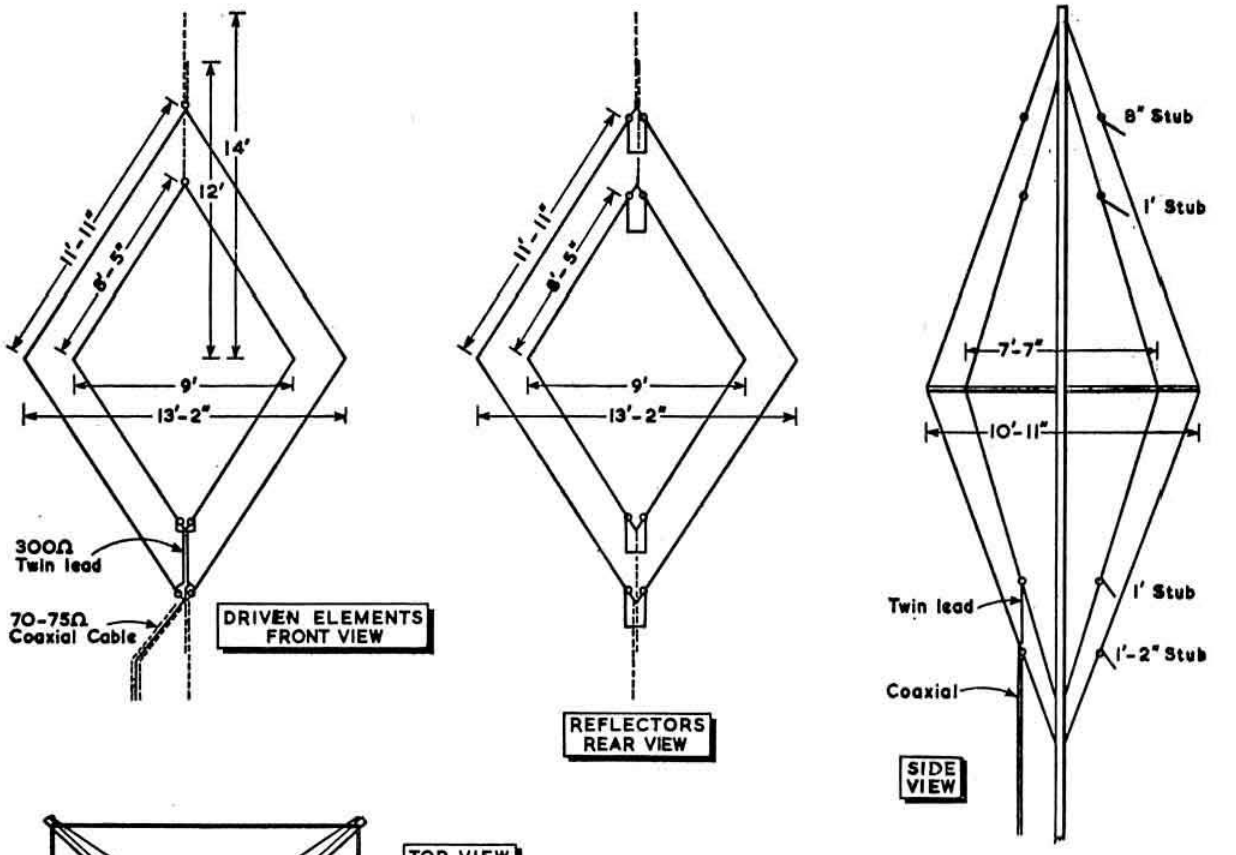


Fig. 1. Construction of the 5A Special cubical quad array for 21 and 28 Mc/s.

Construction

The parts required for the construction (Fig. 1) of the 5A Special are (i) a mast, of about 2½ in. diameter, (ii) four shelf or similar brackets, (iii) 14 small insulators of the egg type, (iv) 8 small stand-off insulators, (v) a suitable length of feeder which may be either coaxial cable of 75 ohms impedance or balanced feeder, (vi) 4 laths or dowels about 1 in. diameter and 8 ft. 7 in. long, (vii) a length of 14 s.w.g. copper wire or stranded wire of equivalent size, and (viii) some small pieces of hardware which can be used to attach three guys to the top of the mast so that the array will swivel. As a matter of necessity the author used for some time a tin can for this purpose. Also required is a quantity

of tape or wire or screws to attach the dowels to the brackets and the brackets to the mast, together with some cord to ensure proper spacing of the dowels.

The dowels should be fastened to the mast and the spacing cords put into position and once this has been done the elements may be strung. It is essential that the element lengths are absolutely correct and that the elements themselves should be reasonably opposite. The bottom stubs are left sufficiently long so that they will tune easily. In practice they should tune shorter than the length given in Fig. 1. The interconnecting link between the 28 Mc/s and the 21 Mc/s elements, which is made of 300 ohm feeder, should be kept as short as possible.

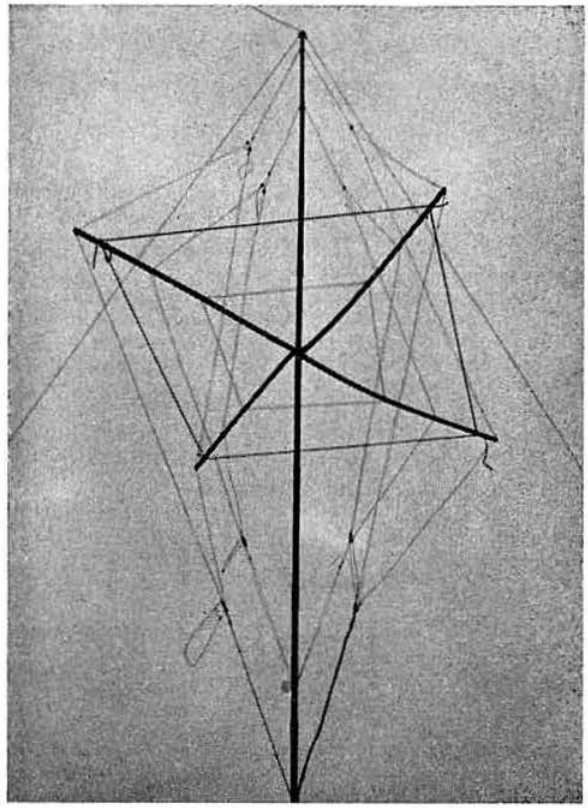
Tuning

The usual method of tuning cubical quad aerials also applies to the 5A Special. However, the various steps will be briefly mentioned. A 21 Mc/s dipole should be erected as far away as possible (at least two wavelengths) and at the same level as the centre of the quad. The dipole should be energized from the transmitter at about 21,250 kc/s and the quad turned away from the dipole. A crystal diode should be connected at the bottom end of the dipole feeder in series with the centre conductor to a voltmeter, the diode being decoupled with a non-inductive 0·01 μF condenser at the voltmeter side. The bottom 21 Mc/s stub on the quad should then be tuned for minimum output decreasing the range of the meter until a definite null is found. With the reference dipole for 28 Mc/s energized at 28,500 kc/s the same procedure should be used to tune the 28 Mc/s element. The standing wave ratio of the dipole should be kept as low as possible to avoid false readings.

When finished the 5A Special will show a strong centre lobe in the forward direction, two deep notches about 50° either side of centre together with two other minor side lobes. It has been found that the notches are useful in rejecting stations near the direction in which it is desired to work.

Results

The standing wave ratio on 21 Mc/s is about 1·5 to 1 or better, and on 28 Mc/s about 1·5 to 1. Reports seem to indicate that the back-to-front ratio averages about 25db. The writer has been extremely pleased with the results obtained from the 5A Special and it has been found possible to have 100 per cent contacts when apparently other stations in the same area using other types of beam aerial have been inaudible in the desired direction.



A side view of an early model of the 5A Special.

The design of this aerial was inspired by an article by G2PU in the R.S.G.B. BULLETIN for March, 1958 entitled "Trends in Aerial Design for the Amateur." The writer would also like to acknowledge the help and enthusiasm of 5A5TM, 5A1TU and 5A5TF who made the construction of the aerial possible.

Band 3 Interference Filter

IN some areas of Kent trouble has been experienced with patterning on Channel 9 caused by the Dover I.T.A. station on Channel 10. The cure was found to be a filter connected in parallel with the secondary of the first i.f. transformer in the vision i.f.; i.e. immediately following the mixer valve in the turret tuner. The arrangement is shown in Fig. 1.

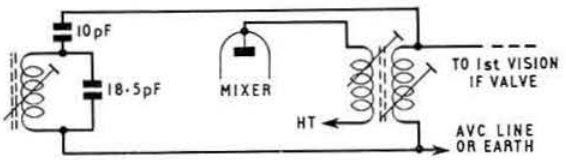


Fig. 1.—Connection of the filter coil in parallel with the secondary of the first i.f. transformer.

The filter coil comprises 12½ turns on a ⅜ in. diameter former (winding length 0·75 in.), the tuning range being from 36·5 to 42 Mc/s with a 18·5 pF capacitor in parallel. The inductance of the coil is about 0·75 μH. The adjustment is as follows: tune the receiver for maximum sound on Channel 9, adjusting the core in the filter for minimum patterning, but taking precautions against "ringing."

Although the idea has only been tried in Kent, it may well prove useful in other areas and for patterning caused by other means.

Improved B.F.O. and "S" Meter Circuits for the HRO

By J. MACINTOSH, A.M.BRIT.I.R.E.
(GM3IAA, ex-VS1AA)*

SINCE acquiring a National HRO-MX in 1946, the writer has made many alterations including two complete rebuilds. On the last occasion, the valve line-up was changed to: first and second r.f.—EF85; mixer and oscillator—6BE6 and 6AK5; first and second i.f.—6BA6; second detector and first audio—6AT6/DH77; b.f.o. 6AK5/EF95; output—6BW6. In addition, an OB2 voltage stabilizer (V10) was added to control the voltage to the screen grids of V2, V3, V4 and V5 while entirely new systems were installed for

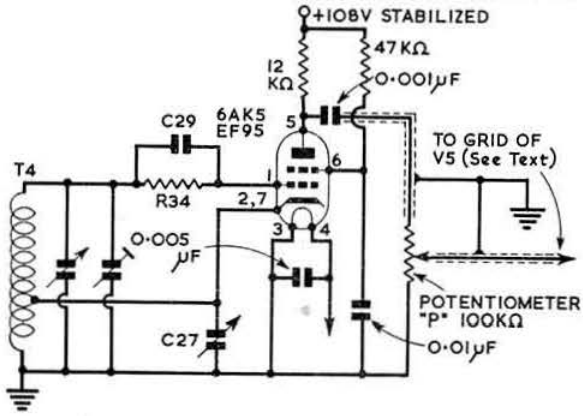


Fig. 1. Revised circuit of the b.f.o. (V8). Operating voltages on the valve are: anode, 75; screen, 50.

b.f.o. control and for the "S" meter. It is with the latter that this article is concerned.

B.F.O.

It was decided to use a 6AK5 as the b.f.o. as shown in Fig. 1. In this valve pin 2 is connected internally to pin 7 (the cathode) so the coil tapping point may be connected to pin 2, while the lead to the b.f.o. capacitor, C27, may be connected to pin 7. Both anode and screen voltages are obtained from the 108V stabilized supply; resistors are inserted in each of the leads to reduce the voltage in the interests of stability and

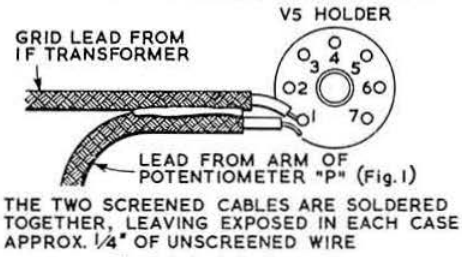


Fig. 2. B.f.o. injection to V5.

the reduction of unwanted harmonics. The valve draws about 3mA. The output from the anode is taken by screened feeder to the grid of the first i.f. valve, V5, but there is no direct connection: it is generally sufficient to place about ¼ in. or so of unscreened wire close to the grid terminal of V5 as illustrated in Fig. 2.

The potentiometer "P" in Fig. 1 enables the b.f.o. injection to be varied in strength to suit weak or strong signals. The arrangement operates excellently once the optimum coupling to V5 has been established. Too weak a b.f.o. will not deal satisfactorily with strong signals, while too strong an injection will block the i.f. chain. Other valves found to work well in the circuit are the 6AG5 and the 6AJ5.

The S Meter

The revised circuit adopted for the S meter uses the original milliameter in a bridge circuit (Fig. 3) so arranged that readings increase with signal strength. The a.v.c. voltage developed in the receiver is approximately a logarithmic function of the input signal so, if the anode current of V11 (6C4) is proportional to the grid voltage, the S meter will read according to a linear decibel scale. The arrangement is a great improvement compared with the original and is well worth the extra valve required.

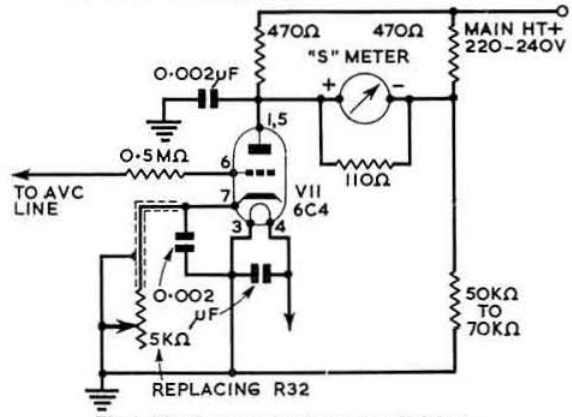


Fig. 3. The S meter circuit used by GM3IAA.

The 6C4 is mounted with the OB2 (V10) stabilizer on a small platform made from a strip of copper measuring 7 in. by 1⅜ in. (see Fig. 4). After completion of the wiring to the two valveholders the platform was soldered to the side of the chassis over the holder for the first i.f. valve. The 5 K ohm variable cathode resistor for V11 was fitted in the position previously occupied by R32.

To set up the S meter circuit, remove the 6C4 and adjust the value of the resistor across the meter terminals until the pointer reads full scale. Replace the 6C4 and allow it to warm up. Turn the a.v.c. switch to *off* and adjust the cathode resistor of the 6C4 until the meter reads zero. When the a.v.c. is switched on, the meter will follow the signal variations. An extremely strong signal will develop enough voltage to cut off the anode current of the 6C4, the meter then reading maximum current. Beyond this point, further increases in a.v.c. voltage will cause no change and the meter cannot be damaged.

Once set correctly, the system can be relied upon to give accurate comparisons between different signals. It is also useful when aligning the receiver. The meter dial could be calibrated in "S" units to suit the choice of the operator.

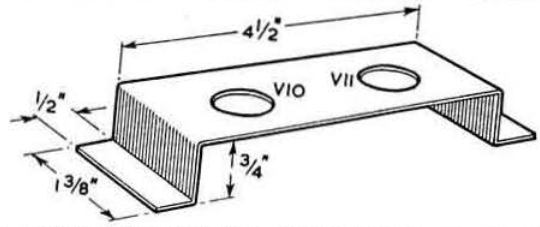
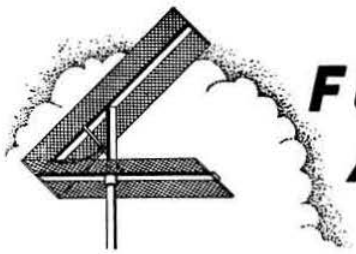
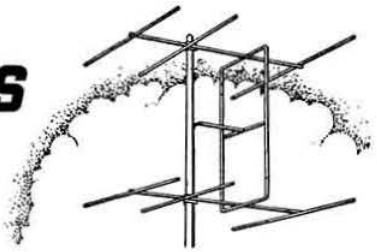


Fig. 4. Platform for V10 and V11. The two ⅛in. lugs are soldered to the side of the chassis over the holder for the first i.f. valve.

* *Broom Park, Cradlehall, Inverness.*



FOUR METRES AND DOWN



Another Major Auroral Opening—Lunch-time Activity on 144 Mc/s

By F. G. LAMBETH (G2AIW) *

DURING the night of October 6/7, there was an outstanding auroral manifestation which affected 2m over a very large part of Western, Northern and Eastern Europe. **GM3BDA** (North Berwick) reports working and hearing stations in DL, G, GM, GW, LA, PA and SM in a band which was sometimes full of auroral signals—it was like the pre-war 40m band, with stations every few kilocycles. Average signals were S6/8 with a few weaker ones and one or two S9.

From October 2 signals from the Dresden TV station had been heard via the aurora. On October 2, B.B.C.-TV on Channel 3 had a distinct auroral " flutter rumble and hiss " which was repeated on October 4. During this period locals on 2m did not appear to be affected by aurora. Similar conditions were also reported by **PA0FB** who worked GM2FHH (57A) and GI3GXP (57A). Incidentally GI3GXP was a new country for PA0FB. Apart from this, stations were heard from G, GW, GM, DL, ON, SM, OZ, DM and PA. The best reception was with the aerial in the north-north-east direction. LA, OK, and HB stations which others were calling were not heard. The duration of the aurora at PA0FB was from 23.00 G.M.T. on October 6 until 02.00 G.M.T. on October 7. Another letter from PA0FB encloses a report from **SP3GZ** (Wolsztyn) who worked stations in DJ/DL, G, GM, LA, OZ and SM and heard DM, ON, and PA. The G and GM stations were G3CCH and GM3EGW worked and GM3BDA heard. Some unidentified stations were heard calling HB9RG and UR2BU. **OK2VCG** worked, among others, GW2HIY, G3KEQ and G3HBW, on October 6 and these QSOs have already been confirmed by the Czech station (via **G3HBW**, who reported this news).

A further report comes from **G3DIV** (Polegate) who checked the band for the second time at 22.45 on October 6 and heard G3ILD who was not raised owing to an aerial fault. When this was rectified, GW2HIY (58A) was quickly worked, followed by GI3GXP (59A). After midnight GM4HR, GM2FHH, G3ILD, and DL6SS were worked. G3ILD's s.s.b. was most interesting and could be read with some difficulty. The " hoarseness " or " ghostliness " of the speech has been previously noted. Little was heard from the Continent except ON4CP and DL6SS. The strongest stations heard at Polegate were GM2FHH and GI3GXP. G3DIV is working on a G2DAF type s.s.b. transmitter which he thinks will be useful in further auroral and metor scatter operations.

Another auroral report comes from G3JR (Barnes) who uses an indoor five element quad. Coming on the band at midnight on October 6/7 he heard and called the following without success: GM4HR, GM2FHH, GI3GXP, GM3EGW, G3ILD, GM3DDE, GW2HIY, DL6SS, HB9RG (beam at 35°) and GM3BDA. Most signals were S3 to S5 with the beam at 5°/10°. At 01.41 G.M.T. GM3FGJ (55A) was called and gave a 56A report. This, at last, was G3JR's first GM!

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G2XV (Cambridge) did not discover the aurora until it was on the way out, but found it very interesting, being able to work DL6TU, GM3BDA and GM3FGJ and to hear several Europeans including SM, OZ, PA, and ON.

G3LTF (Galleywood) has been busy settling in and now has all the gear installed with a 6-over-6 aerial for 2m. The aerial however was tied to a fence post with the bottom Yagi 3 ft. above ground (!) during the aurora, but in spite of this Gs, GWs, GI3GXP and GMs were heard, with HB9RG and ON4CP for good measure. An unidentified OK was also heard. At times GM2FHH was a terrific signal, and GW3MFY was also very strong; with the aerial now up to full height, the next aurora is confidently awaited!

G3CBU (Basingstoke) has started a morning sked with G8VR (Dartford) at 06.45 every Wednesday. Observations would be welcomed, as would news of other morning activity. ON4FG called G3CBU on September 22 but was lost in noise; this was also observed by G2DZN (Welling). On the 24th conditions to the east and west improved with G4AC, G3ANB, GW3DFF, GW8NP and G2BHN worked at mostly S9 phone. During the aurora GM2FHH was worked and GI3GXP, GM3FGJ and GW2HIY heard. On October 7, G5ZT (Plymouth) called but was also lost in the noise. G5ZT/M (Torquay) was worked on October 10. The sked with GW3DFF was kept until September 30 but has been unsuccessful since.

GW3MFY (Bridgend) was not on at the beginning of the aurora but started operating at 23.10 G.M.T. The aurora ceased at 01.45 approximately. Stations worked were G3CCH, G3ILD, GM2FHH, GW2HIY, GM3EGW, and G2FO in that order. Many others were heard. **GW8SU** (Porthcawl) reports hearing SM7DN, ON4CP, SP3GZ, DL7SS and HB9UA.

A letter from **UR2BU** to GW3MFY shows that full advantage was taken of the aurora. He worked 10 SMs, heard seven more, and one OZ. The duration of the aurora at UR2BU was October 6 from 15.15-21.10 G.M.T. and October 7 from 00.40-02.00 and 13.45-16.45 G.M.T.

Can anyone produce evidence of an auroral QSO between England and France prior to January 21, 1957?

G4LX's Auroral Report

Reports from Sweden for September have been received from SM3AKW and SM6PU. SM3AKW has had a number of successful auroral QSOs with SM3, 4, 5, 6 and 7, OH, and UR2BU. In previous openings he had found himself too far north to obtain reflection for DX propagation. SM6PU enjoyed the September 4 opening too, but the only DX worked was DL6QS. Olof heard OH1OZ and OZ4OL but was unable to raise them. His other QSOs were the usual SM stalwarts who never seem to miss an opening. A small opening was apparent on September 26 when LA4VC had a good auroral QSO with SM6PU.

October brought a major opening on the evening of 6/7th. This had been building up for several days. GM3BDA had

noticed auroral flutter as early as 14.20 G.M.T. on October 2 and had logged Dresden TV station later the same afternoon on 145·26 Mc/s. On October 4, GM3BDA again noticed auroral flutter with Dresden TV coming up and down. The same evening G4LX heard G3ILD and GM3EGW in QSO and with strong auroral reflection from the north east.

On October 5, strong auroral flutter was again logged by G4LX and this continued to fade in and out all through the next day until at 22.30 G.M.T. on October 6 when the 144 Mc/s band was beginning to show intense auroral reflection.

A second small opening took place on the afternoon of October 7. **G3HBW** had a QSO with GM3GUI at 15.43 G.M.T. **G5YV** also heard GM3GUI and GM3KGJ at the same time but no QSO resulted.

GI3GXP (Kilkeel) was a star point of contact in the aurora but regrets he was unable to work OK2VCG. Apart from this, however, GI3GXP appears to have done very well including a new country with HB9RG at 58A. Also worked were PA0FB, DL6SS, DL6TU and ON4CP. Conditions were " very FB indeed." It must be nice to be located in a spot like Kilkeel when half Europe is audible!

GM2FHH reports having worked G, GW, DL, SM, PA, ON and heard OK1VDM and OK2VCG during the aurora. He has had a letter from OK2VCG who apparently worked (in addition to those previously mentioned) G6NB, G6ZP and G5YV. OK1VDM heard GM2FHH calling OK2VCG. Better luck next time!

GW2HIY (Holyhead) was on during the aurora but says he wasted a lot of time listening as the band was so full of signals, " in fact I never heard so many at once at this QTH." A QSO with OK2VCG was an easy one, as the OK came straight back first time! SP3GM was heard for nearly an hour, but no contact was made. Conditions otherwise have lately been very poor with only an occasional opening to London, the South and the Midlands, with some fair results to Scotland.

G3EHY (Banwell) first observed the aurora at 23.15 G.M.T. on October 6; it appeared to close rather earlier than in the east and the areas heard differed materially. Very few Gs were logged, but many GMs (sometimes at up to S9A); DL and ON were the only Continentals heard. The following were heard and worked; G3ILD, GM3DDE, GM3FGJ, GM4HR, GM3BDA, GM2FHH and GI3GXP. Also heard but not worked were GM3EGW, DL3SS and ON4CP.

HB9RG (Zurich) also reports on the aurora. He worked DL6SS, G3CCH, GM3EGW, GM3FGJ and of course GI3GXP. Many other Gs were heard, the strongest being G3HBW. HB9QQ was able to work DL6SS. It's always pleasant to hear from the other end, especially when the other end is a bit of a rarity!

Two Metre Miscellany

GM3GUI (Friockheim) had a rather full month, working many GMs in the period September 18/26 with many Gs on the 26th also; both worked and heard. The period September 27/October 5 brought many GM QSOs and hearings, with auroral patterns on October 2 although no auroral QSOs. However, G2CIW (Birmingham) sent a QSL card noting having heard GM3GUI at 54A on October 2 at 15.02 G.M.T. On October 4 heavy auroral reflection was noted with GMs and Gs ranging from 55A to 58A. Patterning was noticed on TV on October 6 and later DJ/DL, SM, HB9RG, Gs and GW2HIY were heard. GM3GUI observes that it appears the Band Plan does not work out too well for Scotland when conditions of good tropospheric or auroral propagation exist because although nearly every station heard was called during the period, in all but a very few cases he had to go down to the low end of the band before getting replies! Also during the opening of September 26, G stations like G5MA were S9+ but many calls brought no replies as they were apparently not tuning above 145·7 Mc/s. Eventually G6NB was worked and then lots of stations wanted QSOs! This is not the fault of the Band Plan but of those operators who will not fully tune the band. So please, when you tune, go all the way round!

A report from the R.E.F. V.H.F. Manager regarding the recent F9QE/G3BDQ contact shows that the QSO was by normal tropospheric means and not by reflection from *Echo 1*.

PA0FB (The Hague) can now use f.s.k. RTTY near the h.f. end of the band and is on the alert for the first G/PA RTTY contact. Maybe G3CQE (Norwich) who is a regular correspondent on 80m RTTY will have the best chance but who knows? **PA0VHF** (nr. Rotterdam) will also be on 2m RTTY within a short time.

A very welcome letter from **DL2XM** (better known as G6XM) reports that he is on 2m at a spot about 30 miles from Dusseldorf and has already started working the DLs. After some difficulty in erecting aerials, DL2XM managed to get a dipole made of 14 s.w.g. wire in the roof space and with a power input of 50 watts, DL2XM is in business—only c.w. for the moment, phone later. It is hoped to put up a good beam soon and use the 829B to drive a 4X150A. DL2XM passes his 73 to all friends and hopes they will look out for him on the band. Further reports are promised in due course.

G3LTN (Weyhill, near Andover) has been on 2m for just over a year and in that time has worked 33 counties, 5 countries and 191 different stations. The transmitter runs at 70 watts input with series gate modulation and the aerial is a 6-over-6 slot-fed Yagi at 25 ft. on a site 285 ft. a.s.l. The receiver is a c.c. cascode converter into a BC454.

During the period September 24/25 there was a very good tropo opening with stations worked in Lancashire, Rutland, Devon, Cornwall, Cheshire, Shropshire and Leicestershire. F9NW (Rouen) was also worked, and remarked on all the Gs he could hear, none of whom appeared to turn his way. At 23.10 on September 24 PA0CML was heard (57) for ten minutes and then faded out. G3LTN is on the band almost any evening including Saturday and Sunday.

Lunch-time Activity on Two

Many 144 Mc/s operators are able to get on the band at lunch-time and G5UM draws attention to the fact that there is a get-together of several London area stations every Friday between 1.15 and 2 p.m. Those regularly active include G5DT, G3EYV and G6NF. London area operators will probably have a pleasant surprise in store, he says, if they search the band on Fridays at lunch times.

G5UM also reports that G8LM—the Murphy Radio Club at Welwyn Garden City—is also on 144 Mc/s at lunch-time. The station is fortunate enough to have a five element Yagi nearly 140 ft. above ground level, mounted on the summit of the lattice tower which stands on the Company's main four storey building. G8LM is in operation nearly every lunch-time between 1.15 and 2 p.m. Other club stations on at lunch times are G3AYC (B.B.C. Ariel Radio Club) and G3GEC (self evident call-sign!).

Four Metre News

G3EHY (Banwell) says that regular Sunday morning calls are sent out and many contacts have been made during the last few months with stations all over the country. The total of counties now worked on 4m is 20, but G3EHY is still looking for Somerset! Operators are exhorted to keep it up during the winter, when propagation possibilities will no doubt be rather better than on 2m. New stations who recently joined the happy band are: G3NUE (Worcester), G3KAG (Derby), G3MNQ (Leicester), G2AOK (Gloucester), GW3ATM (Monmouth). G2OI (Lancashire) has made a welcome return with a fine signal.

Seventy Centimetre News

As a natural corollary of the decision at the Folkestone

Region I I.A.R.U. Conference that the 432/434 Mc/s portion of the band was most suitable for DX working, the R.S.G.B. V.h.f. Committee has been working on the problem of band planning in this region. After much consideration it has been decided that the 2 Mc/s range should be sub-divided in a similar manner to the British Isles Two Metre Band Plan as follows:

70 cm Band Plan

Zone 1	432·0 -432·1 Mc/s
Zone 2	432·1 -432·25 Mc/s
Zone 3	432·25-432·5 Mc/s
Zone 4	432·5 -432·7 Mc/s
Zone 5	432·7 -433·1 Mc/s
Zone 6	433·1 -433·3 Mc/s
Zone 7	433·3 -433·5 Mc/s
Zone 8	433·5 -433·8 Mc/s
Zone 9	433·8 -434 Mc/s

The Zones referred to are the same as those for the British Isles Two Metre Band Plan. A copy of which may be obtained from R.S.G.B. Headquarters on request.

EI2W reports that he has been receiving 70 cm signals from Cheshire. He is now usually on the air from 21.00/21.30 G.M.T. most evenings on 435·78 Mc/s phone.

G2XV (Cambridge) has worked G2CIW (Birmingham) for a new one and G6XA (Leamington Spa) as well as several of the regulars.

G3LTF (Galleywood) now has a 7-over-7 slot-fed Yagi up again for 70 cm and is in business at the new QTH.

The regular Saturday evening Activity Period on the 435 Mc/s band is attracting many regular adherents in the London area. All 70 cm operators are urged to make a point of being on the band from 7 p.m. on Saturdays to help swell the number of available contacts.

U.h.f. News

GW3MFY is looking for information on 23 cm equipment but finds that very little in the practical sense has been published. Can anyone help? Many others will also, doubtless, be interested, especially after the news of the American moon-reflection successes.

HB9RG reports a 23 cm QSO, believed to be a new European record between himself as HB1RG (portable) on Chasseral with DL9GUP, a distance of 188 miles, on September 2. The reports were 589 both ways, and the QSO was repeated during the European V.H.F. Contest but the reports then were only 539.

From the October issue of *Amaterske Radio* it is learnt that OK1KEP/P and OK1KAD/P had a 12 cm QSO on September 4 over a distance of 50 miles which is claimed as a new European record.

U.K. Claimed Scores for the European V.H.F. Contest 1960

The scores claimed by U.K. operators taking part in the European V.H.F. Contest on September 3-4 are as follows: GW3KMT, 17,929 points; G3LTF, 13,861; G3LCH, 13,219; G3JWQ, 11,053; G3HGE, 9,828; G3HBW, 9,168; G3LEV, 4,468; G3LAR, 2,474; GM3LDU, 2,150.

With the Listeners

A.1491 has to get down to study and wishes to thank all those v.h.f. operators whom he has met and corresponded with. A.1495 is mentioned as a possible successor to A.1491 who incidentally has given much valuable news on the state of 2m for a long time.

A.1657 (nr. Leeds) reports that G8BL is now on 2m and looking for QSOs.

Worked and Heard on V.H.F.

Two Metres

DL2XM October 4-18.
Worked: DJ1UP, 3YJA, 5KQ, 5WC, DL1JN. *Heard:* DJ1DC, 1JJ, 1UP, 2ED, 2MP, 2YD, 2YF, 2ZW, 3PR, 3XVA, 3YJA, 4EF, 4NH, 4OB, 5KQ, 5KQ/M, 5WC, DL1FM, 1JN, 3RO, ON4ZK, PA0BN, 0EZ.

G3DIV (Polegate) October 6-7.
Worked: DL6SS, G3ILD, GI3GXP, GM2FHH, 4HR, GW2HIY. *Heard:* G3CCH, 5YV, 6ZP, GM3BDA, 3DDE, 3FGJ, 3OHY(?), GW3MFY, ON4CP.

G3HBW (Bushey, Herts), October 6-7.
Worked: DL9ARA, OK2VCG, GM3BDA, 3EGW, 3FGJ, 3GUI, 4HR. *Heard:* DJ3OY, DL1RX, DL3SPA, 6MH, 6SS, 9GU, G2FO, 3CCH, 3EHY, 3DIV, 3ILD, 3IOO, 3LTF, 5YV, 6XA, GI3GXP, GM2FHH, 3DDE, 3OFY, GW3MFY, HB9RG, ON4CP, 4TQ, PA0CML, PA0FB, SM7ZN.

Huntingdon
G3HWR/P: G2XV, 2CIW, 2FNW, 3BA, 3ADK, 3ARS/M, 3BLP, 3CCH, 3TWQ, 3LTF, 3NNK, 3NOC, 3NUV, 4AU, 4DC, 4MK, 5MA, 6ZA, 8SK.
Heard: G3FCY, 5QA.

G3LAR/M: G2ANT, 3HBW.

Cumberland
G3HWR/P: G2ANS, 2ANT, 2CIW, 2DTO/P, 2HCJ, 2HCJ/M, 2HIF, 3BA, 3CO, 3HS, 3BGL, 3BLP, 3CCH, 3DFL, 3EJO, 3FAN, 3FCY, 3FZL, 3GSO, 3GWL, 3HAZ, 3HBW, 3HRP, 3HWC, 3ITF, 3IWJ, 3JWQ, 3KAG, 3KDG, 3KMT, 3KPT, 3KQF, 3LAY, 3LKK, 3LLE, 3LTF, 3LTN, 3LYG, 3MPS, 3NBQ, 3NGS, 3NUV, 4AU, 5HZ, 5HZ/P, 5MA, 5PW, 5YV, 6GN, 6NF, 60X, 6XA, 6XT, 6XX, 6ZP, 8VZ, GI5AJ, GW2HIY.
Heard: G2NY, 2FNW, 3BW, 3AOS, 3BNC, 3CBU, 3GHO, 3ILX, 3KMP, 3MED.

Westmorland
G3HWR/P: G2XV, 2ANS, 2ANT, 2CIW, 2HCJ/M, 3BA, 3CO, 3HA/M, 3HS, 3JR, 3ZM/P, 3BGL, 3BLP, 3CHW, 3DVK, 3EHY, 3EJO, 3FAN, 3FZL, 3GGR, 3GSO, 3GTW, 3GWL, 3HAZ, 3HBW, 3HRH, 3JMA, 3JWQ, 3KAG, 3KDG, 3KFD, 3KMT, 3KQF, 3LAY, 3LHA, 3LHA/M, 3LTF, 3MPS, 3NBQ, 3NGS, 3NOC, 5DW, 5HB, 5MA, 5UM, 5YV, 6GN, 6NB, 6NF, 60X, 6XA, 6XT, 6XX, 6ZP, 8VZ, GW3MFY.

Rutland
G3LAR/P: G2ANT, 3HS, 3JR, 3ADK, 3HBW, 3HGE/M, 5MA, 6SC, 8VZ.

G4LX (Newcastle-upon-Tyne) Auroral Propagation October 6-7.
Heard: G3CCH, 3EHY, 3ILD, 3KEQ, 3HBW, 3XA, 4AU, 5YV, 6NB, 6ZP, GI3GXP, GM2FHH, 3BDA, 3DDE, 3FGJ, 3FMD, 3OFY, PA0FB, SM6PU, 7ZN.

G5YV (Leeds), October 6-7.
Worked: DL1RX, 6MH, 9ARA, GM3BDA, 3BCD, 3GUI, OK2VCG, SM7ZN. *Heard:* DL1CK, 1FF, 3SP, 6SS, 7HR, 9GU, 9RX, G2XV, 3ALC, 3DIV, 3EHY, 3HBW, 3ILD, 3JR, 3KEQ, 3LTF, 3NNG, 3IOO, 4AU, 6NB, 6XA, 6ZP, GI3GXP, GM2FHH, 3DDE, 3EGW, 3FGJ, 4HR, HB9RG, LA9T, OK2LG, ON4CP, 4TQ, OZ3NH, PA0CML, 0FB, 0YZ, SM5ANH, 6PU, 6QP, SP3GZ.

G3LTF (Galleywood), October 6-7.
Heard: G3CCH, 3ILD, 3IOO, 3NNG, 5YV, 6NB, 6ZP, GI3GXP, GM2FHH, 3BDA, 3EGW, 3FGJ, 4HR, GW2HIY, 3MFY, 8SU.

GM3BDA (North Berwick) October 6-7.
Worked: DL1CK, 1FF, 3SPA, 6TU, 9ARA, G2XV, 3CCH, 3EHY, 3HBW, 4AU, 5YV, 6NB, 6XA, 6ZP, GW8SU, LA4VC. *Heard:* DL1RX, 6MH, G3ILD, 3KEQ, GM3FMD, PA0CML, SM7ZN.

GM3GUI (Friockheim) October 6-7.
Worked: G3CCH, 3HBW, 3ILD, 5YV, GM3KGJ. *Heard:* DL1RX, 3XW, 5HG, 6NX, 6SS, 3DIV, 3IER, 3NNG, 5LL, 6XA, GW2HIY, SM6QP.

GM3LDU, (Clarkston, Renfrewshire) September 2 to 13.
Worked: G2HCJ/M, 2NY, 3HBW (Aurora, partial QSO) 3IKW, 3KCB, 3MED, 5YV, GI3KYP/P, 5AJ, GM2CHN, 2CQI, 2FHH, 3BDA, 3GUI (Tropo) 3HLH/A, 3INK, 3KYI/P, 3OCV, 4HX, 5VG, 6KH, 6XW, 6ZV, GW2HIY, 3KYT/P.
Heard: G2CIW, 3EHV, 3ILD, GI3CXP, GM2FHH, 3DDE, 3EDQ, 3FAX, 3HLH/A, 3KGJ, 3LAV/M, 4HR/T, 6SR.

GW2HIY (Holyhead) Aurora, October 4-7.
Worked: DL6SS, 9ARA, G3CCH, 3DIV, GM2FHH, 3FND, GW3MFY, OK2VCG, ON4CP. *Heard:* DL1FF, DJ5HG, DL6TU, G3EHY, 3HBW, 3ILD, 3JAH, 3KEQ, 5VN/A, 5YV, 6NB, 6ZP, GM3BCD, 3BDA, 3EGW, 3FGJ, 3GUI, 3OFY, GM4HR, HB9RG, ON4TQ, PA0CML, 0FB, SM7YO, SP3GM.

GW3MFY (Bridgend) October 6-7.
Heard: G3FCY, 3HBW, 3KEQ, 3IOO, 4AU, 5YV, 6NB, 6ZP, GI3GXP, GM3BDA, 3ADE, 3FGJ, 3OFY(?), ON4CP, PA0FB.

PA0FB (The Hague), Aurora, October 6-7.
Heard: DL1FF, 1RX, 6GU, 6SS, 7HR, 9ARA, DM2AGJ(?), G3CCH, 3DIV, 3HBW, 5YV, 6NB, 6ZP, GM3EGW, 3FGJ, 4HR, GW2HIY, ON4TQ, 4CP, OZ3NH, PA0YZ, 0CML, SM7ZN.

LONDON U.H.F. GROUP
will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road,
at 7.30 p.m. on Thursday, December 1, 1960
All v.h.f. and u.h.f. enthusiasts welcome.

Amateur Television Convention

VISITORS to the fifth Amateur Television Convention organized by the British Amateur Television Club and held at the Conway Hall, London, on September 10, 1960, were able to see examples of Amateur Television work in all fields, much of it in operation.

Slow-scan television was demonstrated by three members of the Club. Gordon Sharpley (G3LEE/T) showed his monitor, displaying a picture on a 3FP7 tube. The pictures had been recorded by him and were played back on a Collaro tape deck running at 3¾ in. per second. John Plowman (G3AST) showed his picture generating equipment in operation. The apparatus comprised two 5FP7 c.r. tubes, one being used as a scanner for picture generation and the other for display. Caption cards (QSL cards included) could be slipped into the scanner and the picture appeared on the screen of the display tube. Surely this must be the last word in sending QSL cards! The equipment was exactly as described in Mr. Plowman's forthcoming booklet *Slow-Scan Television*. Included in this set of equipment was a very small 70 cm. transmitter, designed for use with standard television or telephony. The slow-scan signal is, of course, suitable for transmission on any phone transmitter. The final item of slow-scan equipment on display was the 5 in. monitor built by the Chairman of the British Amateur Television Club, C. Grant Dixon. This monitor has been built to display tape recorded pictures and is made as a self contained unit to take to meetings and lectures. All the equipment on show demonstrated how easily it could be made, and what excellent results may be obtained for a very small outlay. (5FP7 c.r. tubes cost 12s. 6d. each). As was mentioned at the Convention, direct transmission of these signals is easy—the narrow bandwidth taking up less space than a good phone signal.

Graham Hill of Dover, displayed a complete monoscope camera with its associated pulse and control equipment (monoscope cameras give out a fixed test signal, such as Test Card C). Although this monoscope tube was one of the sub-standard ones available to television amateurs it was generally agreed that the picture from it, displayed on a home-made 14 in. receiver, was one of the best seen at the Convention. The South West Essex Technical College also used a test pattern generator to demonstrate their novel system of fault display in a standard television receiver. The circuit diagram was drawn out and a switching device allowed different faults to be shown in turn. These could be seen as " fault symptoms " on the TV set screen—a neon lamp indicated the fault on the circuit diagram.

The Television Group of the Midland Amateur Radio Society brought their vidicon camera and the telecine attachment, and this gave excellent results. A rather low light level in the hall prevented the camera being shown to its best advantage, but when the camera was pointed at the film projector, the results were very good. Another telecine machine was shown by Bob Tebbutt of High Wycombe. This used the flying spot scanner system and operated with a 9·5 mm. cine projector with the photocell in the lamphouse. Although the equipment was rather bulky, it did show the application of this simple system to an amateur television film scanner.

Vidicon camera tubes were the basis of all the live cameras except three; Michael Cox had his 5527 iconoscope camera which was not operational although it has been seen at other demonstrations. Martin Lilley just managed to complete his image orthicon camera in time for the Convention and Jim Brett (G3MJZ/T) showed his re-built image orthicon. The image orthicon cameras both gave reasonable pictures but were rushed together for the Convention and have still to be completed. Only one of the vidicon cameras—that belonging to John Jull (G3MHZ/T)—had been seen before. This channel has been operating for over three years and was seen on B.B.C. *Panorama* in November 1958. Arthur Critchley combined with John Jull and the rest of the Cambridge Group to show his small staticon camera. This was still in the constructional state but the mechanical work was complete and showed how very compact the vidicon camera can be. Peter Johnson's camera was built to be run completely from the camera, and all the usual remote electrical controls had been incorporated into the camera, with two small units to complete the channel. This camera was operated with John Tanner's (G3NDT/T) vision channel on pulses supplied by Roy Martyr's superb pulse generator. This piece of equipment produces all the pulses required by a television system as well as several test signals, and the demonstration showed how three pieces of equipment, built in Chelmsford (pulse generator) Teddington (Peter Johnson) and Bristol (G3NDT/T) can be brought together and run successfully as one unit when built to the standards recommended by the Club. John Tanner's vidicon camera has the facility for remote or local control and has been built to operate with only three small units at the remote end of the camera cable. Bill Hipwell of Chelmsford showed his colour bar generator and vision distribution amplifier, but not in operation as no colour monitor was available.

Altogether the Convention was a great success. The impression gained from looking at the equipment on show was the steady improvement of constructional standards over the years, coupled with better picture quality. Perhaps a few more stations could have shown the transmitting section as well as the video section, but this was countered by the discussions on the r.f. aspect during the General Meeting in the afternoon. Finally, a word of praise for Don Reid, whose efforts in the organisation of the Convention made the day so enjoyable for all those present.—G3NDT/T.

Region 1 Field Day

WIRRAL Group were again the winners of this year's Region 1 Field Day with a score of 120 points. The runners up were Bury with 76 points followed by Liverpool with 55 points.

Conditions were more difficult than in recent years but the winning group took advantage of openings to make numerous contacts with North American stations.

Lincoln Mobile Rally and Hamfest

THERE was an attendance of 150, including 68 licensed amateurs, at the Lincoln Short Wave Club's Mobile Rally and Hamfest on September 18. Among those present were the President of the R.S.G.B., W. R. Metcalfe (G3DQ), Council Members P. H. Wade (G2BPJ) and F. K. Parker (G3FUR) and the Region 4 Representative, F. C. Ward (G2CVV).

A most interesting lecture was given by Mr. Harvey of A.E.I. while the ladies had a talk from a cosmetics expert. Following the raffle, there was a surplus sale.

Plans are already being made for the 1961 event to be held on September 17.

Grafton Radio Society Christmas Party

GO ahead Grafton Radio Society proposes to celebrate the festive season with a special Christmas Party on Saturday, December 17, 1960. The party will commence at 7.30 p.m. and end at 11.15 p.m. Tickets, price 12s. 6d. single and 21s. double, can be obtained from the Hon. Secretary, A. W. H. Wennell (G2CJN), 145 Uxendon Hill, Wembley Park, Middx., or other Grafton members. The price of the ticket includes an excellent buffet supper and there will be a licensed bar.

Grafton hope their many friends from other parts of London will join them on this festive occasion. Tickets are limited to 100.

The MONTH ON THE AIR

A CHRONICLE OF EVENTS ON THE HF AMATEUR BANDS

By R. F. STEVENS (G2BVN) *

CONDITIONS at the beginning of the month under review were promising and when it seemed likely that DX would be readily available on all bands intense sunspot activity caused a fadeout lasting several days. Thereafter conditions began to improve and at the time of writing the three high frequency bands have all produced their share of DX. Both 28 and 21 Mc/s have been open to all continents and 14 Mc/s has produced some good openings to the Pacific, an area into which it has been difficult to work during the past few months. Asian and Australian stations have been heard on 7 Mc/s during the early evenings and at the moment the radio barometer seems to be indicating good conditions ahead.

In anticipation of what should be heard during the winter months correspondents are asked to restrict their band reports to items which can truly be considered DX in the prevailing circumstances. At the same time any news regarding forthcoming events will be most welcome so that we may attempt to keep readers fully informed as to Dxpeditions and activity from unusual spots.

News from Overseas

5A3CAA (Andy Goodwin, ex-MP4DAA and MP4MAA), whose address is now P.O. Box 263, Benghazi, Libya, sends his 73, especially to the MP4 stations, whom he hopes to meet again after a two-year stay in Cyrenaica. Andy has a number of QSLs for direct despatch and 500 are on their way through the R.S.G.B. Bureau. Please wait for a while before any repeat requests are made for MP4DAA cards. Any 4X4 stations requiring cards should write to Roger Baines (B.R.S.21457) at 56 Balmoral Road, Gillingham, Kent. At present 5A3CAA is using gear belonging to 5A3TQ whilst the latter is on leave in the U.K., but hopes in the near future to be active on s.s.b.

VE3EHR (G2AJF) tells us of the new Canadian telephony allocations which are: 7150 to 7300 kc/s; 14,100 to 14,350 kc/s; 21,100 to 21,450 kc/s; 28,100 to 29,700 kc/s. Whilst the alterations materially improve the position of the VE stations, it is considered that the need still exists for a small sub band in the portion 14,300 to 14,350 kc/s devoted to DX only.

ZD2IJS (G3IJS) is now active (address in *QTH Corner*) on 7 Mc/s but will shortly be on the higher frequency bands in addition.

ZD2JKO mentions that up to now there has been no sign of a new prefix for Nigeria. Mike says that the QSL manager quoted for him in September *M.O.T.A.* is for W/K/QSOs only and other cards should go direct or via the Bureau. The present DXCC score is 160/113, which does not seem a particularly good QSL return for a DXish country.

HM9A is operating from the National Science Exhibition in Seoul up to November 30. Operation is on 7, 14, 21 and 28 Mc/s, A1 and A3.

CR5AE is very active from Portuguese Guinea and has been heard on 14 and 21 Mc/s c.w. between 09.00 and 20.00. QTH is Box 77, Bissau; please enclose I.R.C. for a direct QSL.

According to rumours coming from Stateside, a DXpedition is to visit **Rockall Island.** If the intending DX'ers have not previously visited this delectable spot, then they are strongly advised to make a recce, preferably by helicopter.

When sending cards to QSL managers, operators are asked to either enclose an envelope with the requisite stamps attached, or I.R.C.s. A reply by airmail usually calls for at least three coupons.

News from the Pacific

Ed Goodhue, KH6DLF, provides the following items from this area. K6CQV/KS6 is still active but concentrating on phone patches into the U.S.A. ZK1BS and ZK2AB are both on s.s.b. and looking for European contacts. There are no signs of any activity from KJ6. During a four-day trip to Canton Is. (KB6) band conditions were very poor and the only European station that Ed managed to contact was a UA4. The difficulty experienced by European stations in working KB6 is apparently mutual, for the U.S.A. operators respond generously to a " CQ EU " call, blotting out any DX signals. It is a most discouraging matter trying to work DX from the Islands in this area, reports Ed, and after hearing the VR3L fracas we can only sympathise. KH6DLF left some s.s.b. gear with KB6BH who should be active on 14 Mc/s shortly.

KH6DLF has a problem which perhaps a reader might be able to solve. Canton Is. is administered by both the U.K. and U.S.A. governments. Attempts have been made to obtain a VR1 call, but the Resident Commissioner will not issue an American citizen with a VR1 call in view of the joint administration. Any ideas?

There is activity from KW6s 'CP, 'CQ and 'CL, numerous KR6s, KX6BQ and KM6s 'BO and 'BJ, who have all provided good signals during the past weeks. KM6BO

YO3GK is the only s.s.b. station active in Rumania. His equipment includes a transmitter running 40 watts to an 807, a 33 ft. Windom aerial and a 12 valve receiver.

* *Please send all reports to R.S.G.B. Headquarters to arrive not later than November 18.*

is nominated as the QSL'er of the month: QSO on Wednesday, QSL received on the following Monday in the U.K.

DXpeditions

Bryan Bisley, MP4BDA etc., will be making a trip to **Gibraltar** from November 24 to December 2, the main object being to provide some ZB2 sideband activity. Operation will be on 14, 21 and 28 Mc/s. Bryan will transmit on 14,296 kc/s, listening for W replies on 14,286 and non-W on 14,306. 21,415 and 28,650 kc/s will also be used.

From VU2RM it is learnt that the preparation for the trip to the **Laccadives** is well advanced, and the target date is January 1961. The call will be VU2NRM.

CT2AH should by now be providing some A3a activity, and YN1TAT will be heard from **San Andres** (HK0) towards the end of the month, reports MP4BBW. Later news says November 20 to 27 with c.w. and s.s.b. on 28, 21 and 14 Mc/s. The call will probably be HK0HCA.

The **Zanzibar** foray of **VQ1HT** and **VQ1SC** accounted for some 3,000 QSOs with 80 countries and provided many stations with a new country. Operation was from the ironing room situated on the roof of the hotel and averaged 14 hours per day during the period September 23 to October 1. Stan (VQ4GQ) mentions that conditions were not too good, 28 Mc/s especially being a disappointment. QSLs are being handled by W2CTN.

As far as is known **AC5CQ** was not worked from the U.K.

This picture of AC5CQ (VU2CQ) and AC5PN was taken during a break in the very bad weather experienced during their recent DX-pedition. AC5PN is a personal attache to H.E. the King of Bhutan.

but when writing to your scribe VU2CQ stated that despite poor weather conditions some 1,800 QSOs were made. QSLs should go to W4ANE or VU2CQ. It is hoped that a further trip will be made later.

The **Galapagos** sojourn of the *Yasme III* commenced on October 19/20, while VQ9AIW promoted activity from the **Seychelles** from October 21, before visiting other DXotic spots mentioned last month in company with W4BPD.

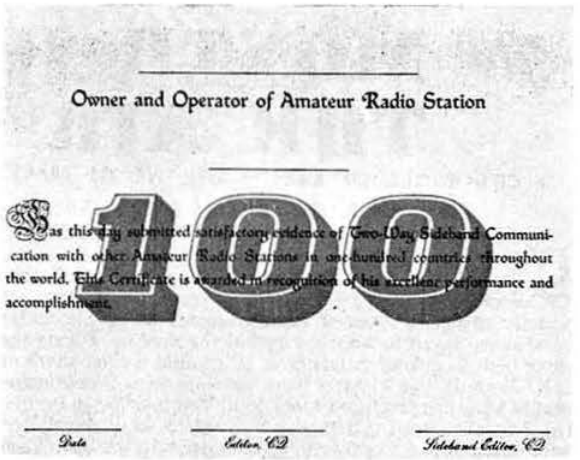
Another trip to **Marcus Island** is in the offing, staffed by JA1BCQ, JA7QQ and others. Exact dates depend upon transport facilities. **Clipperton Island** activity is scheduled to commence around November 15.

Contests

A reminder that the c.w. section of the **CQ W.W. DX Contest** will be held from 02.00 on November 26 to 02.00 on November 28. Logs must be postmarked not later than January 15 for this section. This will be followed by the **R.S.G.B. 21/28 Mc/s Telephony Contest** on December 3/4 for which it is hoped that there will be a good entry.

The Sixth European (WAE) DX Contest will be held from 05.00 January 14 to 23.00 January 15. A copy of the rules and log form can be obtained by sending a s.a.e. to G2BVN. Log sheets are obtainable from the D.A.R.C. QSL Bureau, Postbox 99, Munich. Please send a large envelope and two I.R.C.

The Fifth CQ W.W. S.S.B. Contest will take place from



The s.s.b. certificate issued by CQ Magazine. Claims from amateurs in the United Kingdom are now being handled by G2BVN.

15.00 January 28 to 21.00 January 29 with only 24 *hours* of operating allowed. This contest, which is gaining in popularity each year, is based on the working of prefixes. Further details will be given in the January *M.O.T.A.*, but in the meantime log forms can be obtained from K2HEA/K2MGE, 12 Elm Street, Lynbrook, New York. Please send a large self addressed envelope with sufficient I.R.C.

Awards

CQ magazine offers awards for **two way s.s.b. contacts** in the shape of attractive certificates for 50, 75, 100 or 200 countries worked, with stickers for intermediate groups of 25. For the "Worked 50" or "Worked 75" certificates a listing of confirmations verified by another licensee is sufficient. For the "Worked 100" or "Worked 200" awards it is necessary to submit QSL cards together with the listing. In order to avoid the cost and inconvenience of sending cards to the U.S.A. the joint editors of the *CQ* sideband column, K2HEA and K2MGE, have arranged that cards from the United Kingdom can be sent to G2BVN who will check the listing and forward the certification to *CQ*. Confirmation check lists and a note of the brief rules will shortly be available upon receipt of a s.a.e.

From ZS6IW via A.1980 come details of the **Golden City Award** which can be obtained by stations working 15 ZS6 operators located in Johannesburg, after May 31, 1960.

DXotic Showcase

Call-sign	kc/s	Mode	G.M.T.	Country
FB8XX	7,025	c.w.	19.35	Kerguelen Is.
OH0NC	7,065	c.w.	00.01	Aaland Is.
ZL4GA	7,015	c.w.	18.10	New Zealand
CR5AE	14,005	c.w.	08.05	Port. Guinea
FO8AC	14,027	c.w.	08.00	Tahiti
VK0WH	14,040	c.w.	20.30	Macquarie Is.
KM6BO	14,308	s.s.b.	08.45	Midway Is.
KX6BQ	14,310	s.s.b.	13.20	Marshall Is.
VR1D	14,154	s.s.b.	05.13	Gilbert & Ellice Is.
VR3L	14,312	s.s.b.	10.15	Christmas Is.
HC8VB	21,075	c.w.	20.09	Galapagos Is.
VK9NT	21,390	s.s.b.	10.30	New Guinea
KS6AK	21,250	a.m.	08.00	Samoa
K0SLD/KW6	21,230	a.m.	09.30	Wake Is.
UA0EH	21,100	a.m.	10.15	U.S.S.R. Zone 19
CR5SP	28,386	a.m.	11.23	Sao Tome Is.
ZS8I	28,200	a.m.	16.56	Basutoland

The QSLs and five I.R.C.s should be sent to the Awards Manager, P.O. Box 2327, Johannesburg, South Africa.

Certificate collectors are reminded of the **WALT** (Worked All London Town) Certificate offered by the Grafton Radio Society to stations submitting proof of two way communication with 65 of the 118 London Postal Districts. Details may be obtained from Grafton Radio Society, Montem School, Hornsey Road, London, N.7.

A quote without comment " there are between 600-700 awards that can be worked for . . . and, believe it or not, it is almost impossible to have a QSO with any station without that QSO counting towards some award."

DX Briefs

From A.1696 it is learnt that **ZS1AB** is looking particularly for contacts with stations in Monmouth and Rutland. The main operating band is 28 Mc/s where Barney radiates a potent signal from Capetown.

The **Argonaut** s.s.b. transmitter of W6UOU is on its travels again and should have been heard from **VQ8AD** by the time this is being read.

LA1LG/P and LA1NG/P are both very active from **Jan Mayen Is.** following the return of LA3SG to Norway. Egil, LA1NG, will be on the island until August 1961 and will provide contacts on both c.w. and s.s.b.

VR3L made an appearance on s.s.b., was well heard in the U.K. and also caused some of the worst operating tactics heard for a long time (not from G).

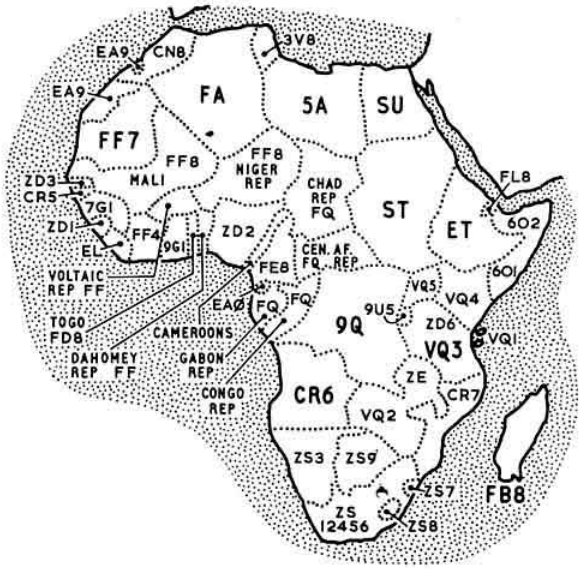
The following stations are known to be active from the new republics of the French community: **Congo**—FQ8s, 'AE, 'AG, 'AR, 'AX, 'HP, 'HV. **Central African Republic**—FQ8HT. **Tchad**—FQ8HL, 'HO, and 'HW. Activity from Dahomey, Gabon and Volta may be provided by CR6CA in the near future.

9G1DQ was activated by G3III during September when based in Ghana for trips into 9Q5.

Bob Kemp, F.R.S. 309, offers his services as a QSL manager to any deserving DX station. QTH: 200 Ridge Road, Richmond 29, Va., U.S.A.

Has anybody received a QSL from **ZA2BAK**?

If this should catch the eye of **VQ3GX**, now in the U.K. on leave, would he please contact G2BVN.



This map has been prepared by G2BVN to show the prefixes in use in Africa at the end of October 1960.

QTH Corner

AP2AD	P.O. Box 65, Lahore, Pakistan.
CR9AN	Rua Bispo. Medeiros 30B, Macao.
CT2AH	via K8RTW.
EP1AD	APO 205, New York City, N.Y., U.S.A.
HC8VB	via W8EWS, P.O. Box 6066, Flint 6, Mich., U.S.A.
HM1AD	3, Younjidong, Seoul, Korea.
HS2A	via W7USF
K0SLD/KW6	P.O. Box 68, Wake Island, Central Pacific.
SV0WO	P.O. Box 564, Athens, Greece.
VE2DBM	Box 6121, Montreal, Canada.
VK0WH	VK2AWH.
VP8FF	P.O. Box 156, Port Stanley, Falkland Island.
YV5AQC	Venezuelan A.R.C., P.O. Box 2285, Caracas.
ZD2IJS	The Audit Dept., Northern Region, Kaduna Nigeria.
ZD2KHK	Nigerian VHF Maintenance Service, P.O. Box 2217, Lagos, Nigeria.
ZE1AA (ex-ZD6JL)	28 Ascot Road, Avondale West, Salisbury, S. Rhodesia.
ZS1AB	P.O. Box 951, Capetown, S. Africa.
ZS1KO	P.O. Box 179, Robertson, Cape Province, S. Africa.
3A2DA (G3CWL)	Sans Nom, Fir Tree Rd., Leatherhead, Surrey, England.
5A3CAA	P.O. Box 263, Benghazi, Libya.
9U5DM	Box 1, Usumbura, Ruanda Urundi.
9U5MC	Box 78, Kigali, Ruanda Urundi.
9U5PD	P.O. Box 110, Astrida, Ruanda Urundi.

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

Listeners requiring cards from **PJ3AD** should enclose I.R.C. when writing. The expense of QSLing 100 per cent. from Aruba is high, he reports to F.R.S. 309.

PY7LJ is now active on 14, 21 and 28 Mc/s phone and c.w. This station is located on Fernando de Noronha, off the east coast of Brazil and counts as a separate country for DX*CC*.

Band Reports

7 Mc/s

This band has produced some good second layer DX during the last month despite heavy QRM from Europe. There was considerable activity during the VK/ZL Contest.

G3LET (Westcliff-on-Sea) worked some excellent DX which, broken down into an hourly basis gives us: *06.00* HK3AH; ZL1AJU; *17.00*, VK5NO; *18.* ZL4GA; *19.* JA1LZ; FB8XX; ZS6AZD; VKs '2QL, '3XB, '5LD, '6WT, '9XK; *20.* JA1ANO, MP4BBE; all on frequencies between '005 and '025. **GM3OEV** (Kinloss) QSO'd CX2TF (00.15), FA8DD (00.25), OH0NC (00.01), UA9FI (03.05) and UA0AG (22.30).

VQ4HE (Nairobi) reports that a number of VQ4 stations including 'HT, 'GQ, 'AQ, 'HE, 'CC and also VQ5EK are regularly working around 7015 kc/s after 18.00. They have regular QSOs with VK,ZL and other African countries and frequently hear the G stations but contacts are not very frequent. Likewise Gs are often heard on 3·5 Mc/s. John suggests that a little concentrated listening might well produce some VQ4/G contacts. **GC2CNC** (Jersey) comments on the wealth of countries available on this band from Europe, and how this can help those interested in the W.A.E. award. GC2CNC worked 38 countries on c.w. during the week of the solar disturbance when in fact Gs were not being heard.

B.R.S. 20317 (Bromley) and **B.R.S. 22795** (Kingston) have sent in very complete logs for this band, and the former in particular includes some DX that should make the transmitting brethren sit up. Combined on an hourly basis the reports read: *00.00* UL7AA, VP2CA; *03.* XE2BL; *05.* KL7EN, W6PQT, UR2GC; *06.* ZL1HY; *07.* ZL1AH, ZL3GU; *18.* ZS6NE, VK5NO, ZL4GA, VQ4CC; *19.* VS9OA, JA1LZ, UH8BI, VK9XK, VK2GW, UA9KAG, UA0KAN; *20.* VK5JE, JA1LZ, VK2JX; *21.* UJ8KAA, ZD2GUP; *22.* KV4CI/MM, UA0AO, VP4TR, VP9EH, W2GAC/KP4, YV5ML, CX2TF; *23.* KN4IDV, KN8SDZ and many other W novice stations; UA0AG, PZ1BC.

14 Mc/s

This band has continued to produce useful DX at most hours of the day and sometimes comes up with highly desirable calls. Practically all the DX is worked on c.w. and s.s.b., but it is difficult to say which has the edge as very few of the U.K. s.s.b. operators send in reports. Certainly there will, for the present, always be a few spots which can show c.w. activity only.

C.W.

G2FFO (Burnley) starts the ball rolling with 9U5MC (19.50), FQ8AG (20.15), FO8AC (08.00), M1/W4BPD (17.35); OR4TZ (20.15), SV0WZ (Crete, 19.30), VQ1SC (18.35), VK0WH (20.30), VR2DK (08.10), VE2DBM (Hudson Bay, 20.15), UA0KAE (13.21), ZS1RM/8 (17.45), VQ8BC (18.05), W6UNP/KH6 (06.45) and 4S7EC (19.15). Following this useful selection comes **G3BHW** with several of the above together with CR5AE (Port. Guinea, 08.04), DU1OR (20.45), EP1AD (22.59), FP8BO (20.54), PY7LJ (Fern. de Noronha, 20.17), VP5BL (22.32), VQ1HT (22.38), YI1RK (21.30), ZS7M (19.00) and ZS1RM/8 (18.29). Eric arranged his calls in alphabetical order for which he will be enrolled in the Scribes' Union! **G3MBN** (Bath) continues the good work with HC2VB (06.19), KH6COB (06.24), OY2H (12.17), ET3AZ (07.16), FO8AC (07.14), VP3YG (21.02) and LA8YB/P (07.14), on Jan Mayen Is. **G3AAE** (Coulsdon) follows up with SM7BZD/9Q5 (19.50), ZS1OU/8 (19.00), VQ1HT (20.05), SV0WO (10.00) and EP1AD (18.25). **ZD2JKO** (Zaria) worked CE3AG (00.55), UH8DA (04.05), UI8KSB (03.35), UJ8KAA (04.25), VR1B (06.05) and XZ2TH (18.55).

From Cyprus **B.R.S.22249** reports hearing KG1BM (03.12), SU1AL (23.50), TF3AB (01.45), VK0IT (05.55), ZD1CM (00.55), RAEM (03.10), KH6BXU (06.20) and FO8AC (05.30). **B.R.S.20317** logged VK9NT (11.50), FG7XF (23.05), HH2ML (19.33), VK9XK (14.56) and KR6JM (16.15). **B.R.S.22795** heard CE3DH (22.04), HH2JV (21.38), JA6EK (21.55), OX3DL (19.49) and UD6GF (18.58).

S.S.B.

GW3LFM (Rhyl) with a first report from Wales offers HS2A (15.45), KG6NAB (14.14), KR6HL (15.00), KW6CV (19.47), LA1NG/P (19.10), OY7ML (14.41), W4ARH/KL7 (16.20) and 3V8CA (19.21); whilst from **G8KS** (Farnborough, Kent) we have KR6KU (19.40), KW6CP and 'CQ (13.20), KH6AWS (18.00), KX6BQ (13.20), VP6WD (20.05). Just to show what can be worked (and reported) **MP4BBW** (Bahrain) submits the following tremendous list: CR5MA (18.00), CR9AH (15.15), EQ2AT (13.10), KA5MC (14.17), KG6FAF (15.22), LU8DAF (12.54), M1/I1IN (20.08), HS1B (13.53), HS2A (15.13), KW6CP (18.24), KX6BQ (12.46), OY7ML (18.36), PZ1BF (21.26), FB8CM (15.06), HA8WS (18.54), VQ9TED (18.24), VR1D (05.13), ZS3AD (18.18), VP2AB (21.08), VS6AE (15.20), YS1RE (21.19), 5A3CAA (19.10), 9M2DB (14.41), 9N1SM (15.42) and 9Q5US (17.54).

Ian Cable, MP4BBW, known to s.s.b. operators as the Big Bad Wolf of Bahrain. Red Riding Hood in this case is presumably the choice morsel of DX about to find its way into the station log.

Leonard Kokko, OH3SE, of Tampere, Finland, is a member of R.S.G.B and always pleased to work U.K. amateurs on 14 Mc/s c.w. He is particularly active between 12.00-14.00 G.M.T. on Saturdays.

In view of the number of listener reports received these have been combined and are presented on an hourly basis. *05.* HC2VB; *07.* KC4USN, KH6KH, SV0WO, VK9NT, YU7LAA, W4VCB/KL7; *08.* K6CQV/KS6, KL7DKG, OH0NC, VR3L, XE1SN, YS1A, ZL3PJ; *09.* KH6DLF, KL7PJ, OA4CV; *11.* W7QMU/VP8; *12.* KM6BV; *14.* KX6BQ; *15.* VK6MK, VU2RM, 9K2AM; *16.* HZ1TA, KA2BB, KR6KA, 3V8CA; *17.* AP2CR, EQ2AT, HS1B, KH6AWS, KX6BQ, VS6EK, ZS5JM; *18.* FB8CM, PZ1AX, 9Q5US; *19.* VQ5FS, *21.* BV1US, EA0AC, KV4BQ, VP2AB.

For the above we thank A.2389, A.1792, A.2111, A.2273, A.1930, A.1736, A.1965, B.R.S.22694, B.R.S.22013, B.R.S. 22925, and F.R.S.309.

A.M.

GM3OEV reports contacts with 6O2AB (20.35), DL3RO/EP (17.00), OH0NC (17.00) and ET2US (22.25). **F.R.S.309** (Virginia) has heard VP1RT (04.56), HK3LX (06.02), VE3ELO/9Q5 (22.27), YN6HH (02.35), HP1TS (23.56) and XE1CCT (18/08). **A.2389** (North London) mentioned amongst others YV1AGU (20.45), VK5MS (19.54), and SU1AS (17.11).

21 Mc/s

This band is undoubtedly producing openings to all parts in between some dull patches and promises to be reliable during the winter months for daytime DX.

C.W.

First in is **G3BHW** with EP1AD (13.20), ET3AZ (15.32), FB8XX (13.10), FR7ZD (18.05), HP1AC (21.10), VK5BP/8 (15.25), VQ1SC (12.45), VQ8BM (18.27) and 6O2AB (18.32). **G3AAE** quotes VK9XK (10.35), UJ8KAA (12.50) and **K0SLD/KW6** (12.05), followed by **G3BHJ** (Norwich) with MP4BCV (15.25), ST2AR (13.50), UL7AB (12.05),

UJ8KAA (12.25) and JA1ACB (12.57). **ZD2JKO** mentions KZ5TD (22.30), VP8EG (18.35) and VP9CX (22.20), and **G8KS** rounds off with KH6DLF (19.30), UA0EH (09.35, Sakhalin Is.), K0SLD/KW6 (09.55) and CR5AE (18.20).

B.R.S.22013 (Hereford) logged VS1KQ (17.11), VQ1HT (17.14), VP8EH (17.55) and VQ3HZ (18.51). **B.R.S.20317** submits PY7LJ (20.23), CR5AE (17.30), VQ1SC (18.20) and VK9XK (10.45). **B.R.S.22249** heard ET3AZ (13.45), ZD1AW (08.08) and ZL1AH (08.18).

A.M.

GM3OEV QSO'd with CR7CR (17.20), ET2BD (17.15), FR7ZD (19.20), PZ1AW (20.46), VP8EI (20.45, Graham-land), VS1DW (15.35), 9M2EB (15.45) and 9U5FW (21.00) **G3BHW** follows up with AP2Q (13.41), CR9AN (13.20), FF4AB (17.20), FF7AB (10.35), VR2AS (09.25) and 9U5DM (18.28). **G8KS** mentions VS5GS (18.25), AP2AD (12.35), 9N1MM (16.30), VR2DE (08.00) and KS6AK (08.00). **GC2CNC** (Jersey), running 35 watts to a three element beam, worked ZE8JL, VQ2SB, ZP5CF, PZ1TK, HC1AM, and VP4RL. **G3BHJ** contacted HI8DGH (18.00), VE8RS (13.10), VS9ADL (15.30), TF5TP (17.45), ZD1AW (12.25), KL7FAY (11.10) and HC1FV (21.40). **G3AAE** persuaded UA0EH into a phone QSO at 10.15 on '100 together with Tchad stations FQ8HL (09.50) and FQ8AW (17.25).

By the efforts of A.1543, A.1736, A.1792, A.1930, A.1965, A.2273, A.2297, A.2389, B.R.S.18876, B.R.S.22013, B.R.S.22249, B.R.S.22694, B.R.S.22795, B.R.S.22844 and B.R.S.22925, the following consolidated hourly list is produced.

05. KG6AMO, 6O2AB; *07.* FF7AG, VR2DE; *08.* UH8BN, *09.* K0SLD/KW6; *11.* OH0NC; *12.* AP2Q; *13.* VU2BK; *14.* CR9AN, KL7DNT, ZB2U; *15.* DU1AP, EA0AC, VP1TJ; *16.* CT3AN, FB8CO, FQ8HL (Congo), VU2CQ; *17.* CR6AS, KR6IM; *18.* KG4AO, OR4TX, VP5DM, 6O1TUF; *19.* FR7ZD, HH2AR, VP8FG, 9U5KU; *20.* PZ1AR, VP2LS, VE8BF, VP8CP, VP8DW, VP8EI and VP8EE (Grahamland), 9U5DD; *21.* KZ5DT, VP8EM, VP8EI, XE3AF.

Commonwealth Competition

	28 Mc/s	21 Mc/s	14 Mc/s	7 Mc/s	3·5 Mc/s	Total
G3AAE	50	52	51	14	—	167
G3BHW	41	63	56	4	—	164
ZD2JKO	32	50	37	24	6	149
VE3BWY	32	25	65	16	9	147
VE7KX	14	38	29	32	27	140
G5VU	21	35	41	12	12	121
GB2SM	27	32	13	14	3	89
VQ4HE	26	14	23	14	9	86
MP4BBW	1	20	61	—	—	82
G8DI	12	11	21	14	18	76
G3LET	—	—	—	68	—	68
VO2NA	7	10	24	14	6	61
G3MGL	8	2	6	4	—	20
G3JFD	1	4	1	—	—	6

Band Leaders

28 Mc/s—G3AAE 21 Mc/s—G3BHW
14 Mc/s—VE3BWY 7 Mc/s—G3LET
3·5 Mc/s—VE7KX

	28 Mc/s	21 Mc/s	14 Mc/s	7 Mc/s	3·5 Mc/s	Total
B.R.S.20317	41	68	67	68	30	274
A.1859	43	71	52	8	6	180
B.R.S.22013	29	57	68	18	6	178
B.R.S.22249	32	64	46	26	9	177
B.R.S.21008	38	58	48	4	—	148
A.1792	33	53	42	—	—	128
A.1583	25	62	28	—	3	118
B.R.S.18876	8	76	20	—	—	104
B.E.R.S.195	—	—	47	30	12	89
A.1965	12	41	17	2	3	75
A.1980	27	35	6	—	—	68

Band Leaders

28 Mc/s—A.1859 21 Mc/s—B.R.S.18876
14 Mc/s—B.R.S.22013 7 Mc/s—B.R.S.20317
3·5 Mc/s—B.R.S.20317

28 Mc/s

C.W. and A.M.

A1 from **G3AAE** accounted for VQ1SC (11.34), ZS1R M/8 (15.02), and 9Q7ZZ (16.50) in Katanga. On A3 G3AAE worked CR5SP (11.23), FF7AG (18.35), FB8CI (16.12), HP1AC (14.45), DL3RO/EP (11.25), ZS8I (16.56), UG6ABD (14.35), PZ1BE (15.48), XE2DO (16.42) and 9U5VS (13.40). **ZD2JKO** QSO'd CR5CS (14.55), FF7AG (09.30), HK3LZ (13.35), VQ5AU (15.20) and 9U5DM (13.00). **G3BHJ** obtained reports from CR7EA (15.45), EA8CN (13.40), UP2KCB (12.50), UW9CR (12.25), VS9AJW (13.30), VU2PS (13.40) and YN1EDB (13.40). **G3JFD** (Derby) using 50 watts to a trap dipole and reporting for the first time, mentions A1 QSOs with CX2BT (19.00), K6QPG (19.10), ZD2JKO (13.23) and North American areas.

The following were heard:

09. UD6ABE, UI8AAD; *10.* JA's; *12.* VS9AJW: *14.* UR2BU, UW9CB, VK0PM, VP3MC, VK5AV, 9U5DM; *15.* EL4M, EA0AC, VK0ED, VP9WB; *16.* CR6BR, VP3MC, YS1IM, ZD6PY; *17.* VP1BS, VQ3HH, ZS3R, 9G1CW, 9Q5DD; *18.* KZ5AT, OA4KF, PY7LJ, VP3EB, VQ3PBD; *19.* HP1AC, XE2DO, XE3AF, ZS3S. The reporters were A.1543, A.1736, A.1792, A.2111, A.2273, A.2297, B.R.S.18876, B.R.S. 22013, B.R.S.22795, B.R.S.22844 and F.R.S.309.

It will be seen that where a large number of listener reports have been received these have been presented in a composite form in order to avoid duplication, a point which will be appreciated when it is known that such apparently rare DX as EQ2AT and KX6BQ were each reported nearly a dozen times. However, readers may care to comment as to whether they favour the continuation of this presentation.

The Commonwealth Competition

The overall leadership in the transmitting section has passed to **G3AAE** but as he will be forced to close down temporarily during a house moving operation he may well be overhauled next month. We welcome several new entrants and hope that the last few weeks will produce a close finish. In the Listeners' Section the only change is that B.R.S.18876 has replaced A.1859 as band leader for 21 Mc/s.

The table will close on December 30 but the final scores will be given in the February 1961 issue of the BULLETIN.

There has been little comment on a further table for 1961 and it is therefore assumed that DXers will prefer to concentrate on their country or prefix chasing.

* * *

M.O.T.A. is closed for another month by offering thanks to all contributors and asking that all news items and reports should be sent to arrive at R.S.G.B. Headquarters by November 18 for the December issue.

Club Stations

READERS are reminded that the conditions governing the operation of club stations are the same as for personal licences, except that, in order to overcome the requirement that the licensee must be in constant attendance, the G.P.O. are prepared to approve as additional operators (who may act in place of the licensee) the licensees of other amateur stations. The call-sign allocated to a club is for use only by the licensee, or one of the duly authorized additional operators when operating the club station. It is permissible for a club station to be operated from an alternative address *but individual members of the club are not permitted to use the club-call except on club premises and only then if they are approved operators.*

I.R.T.S. QSL Bureau

THE address of the I.R.T.S. QSL Bureau is now 24 Wicklow Street, Dublin.

Single Sideband

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

A FEW months ago a reader wrote to the Editor and questioned the validity of certain statements made in *Single Sideband* in regard to the relative power gain of a.m. and s.s.b. methods of transmission. The writer replied in the September issue of the BULLETIN in the form of an open letter and gave further details of the case for single sideband.

The technical advantages and claims for single sideband have been discussed many times during the past ten years. However the average amateur still using an a.m. or c.w. transmitter is not yet ready to scrap " old faithful " on the basis of a purely academic argument. He is in fact looking for more practical advantages, and preferably opinion, not from a known s.s.b. enthusiast, but from a more " neutral " source. With this in mind the writer feels that the following comments are worth repeating.

" MP4BBW (Bahrain) cannot understand complaints regarding poor conditions having worked 100 countries on two-way sideband in 50 days, at the same time adding 12 new prefixes."

Who said that?—Why Mr. DX himself, R. F. Stevens (G2BVN) in *The Month on the Air*, in the October issue of the R.S.G.B. BULLETIN.

Now for the second comment . . .

" One fact that is becoming most noticeable is that s.s.b. is attracting not only the a.m. operators but also many dyed-in-the-wool c.w. men. Most mornings on Twenty one can hear nets which include many of the VKs whose c.w. signals used to be conspicuous around the band. The very morning of writing these words, for instance, G6QB joined in with VK3CP, 3JK, 3NR, 4YP and VE3BHY . . . six life-long brass pounders caught up in the new mode.

" One of the major attractions of s.s.b. is that the whole business is so slick; just one pair of call-signs and one is either in the QSO or out of it. No long winded calling as on c.w. only to be answered by someone completely different whom one probably doesn't want to work anyway! The combination of s.s.b. and c.w. appears to cover practically everything, and it is obvious that the a.m. carrier wave is doomed for eventual extinction."

Who said that?—L. H. Thomas, M.B.E. (G6QB) in the " DX Commentary," October issue of the *Short Wave Magazine*.

DX hunters and QSL card collectors please take note.

The G2DAF S.s.b. Transmitter

Purely as a matter of interest the writer has compiled a list of the call-signs of amateurs who have either come on to 80m using a G2DAF s.s.b. transmitter or passed the information that they were completing the building of this rig and hoped to be operating sideband in the near future. To date the list contains more than 40 different calls. Additionally there must be many more still under construction that the writer has not been informed about and others who have not come on to the 80m band at all but are busy on 20 and 15 working the DX.

Notwithstanding this considerable number of amateurs who would be only too willing, and in a position to give practical advice, the writer is still receiving many letters from potential constructors to the effect that the FT241 l.f. crystals around 460 kc/s (used in the original transmitter) are no longer available from surplus sources, and enclosing lists of those that are available and asking for advice as to whether these are in fact suitable for the G2DAF design.

This point was in fact dealt with in the original constructional article published in the October 1959 issue of the BULLETIN (second paragraph on page 170) and it was stated that the design limitation is a first intermediate frequency of 2075 kc/s plus or minus 25 kc/s, and that any combination of sideband switching and filter crystals can be used so long as this limitation is met. All normal i.f. transformers covering the usual range of 455-465 kc/s can be made to tune perfectly satisfactorily over any required section of the range 425-500 kc/s by changing the shunt resonating capacitors to the required value. Therefore any—repeat any—filter crystals from 425 kc/s up to 500 kc/s can be selected from those that are available and will give equally satisfactory results.

Filter construction and alignment was not given in detail because the wanted sideband suppression, and therefore the required filter configuration, is a matter of personal choice. For instance the filter does not have to use shunt crystals and it does not have to be two half lattice sections. There are many sideband transmitters in use on the 80m band—including commercially built ones—using a simple half lattice section and a filter of this type is capable of giving an acceptable unwanted sideband suppression. The writer would however like to make the plea that the present generally excellent standards for amateur s.s.b. working are not lowered to the extent where the sideband suppression is so poor the transmission is virtually a double sideband one.

Sideband Parameters

Single sideband has many advantages to offer for amateur communication but by far the greatest advantage is the elimination of heterodynes because of the absence of the transmitted carrier, and the reduction of bandwidth to half of that normally required because of the suppression of the mirror image sideband. It is therefore quite obvious that these two great advantages can only be realized in practice if every amateur operating single sideband makes an honest endeavour to maintain an effective level of unwanted sideband and carrier rejection. Remember a double sideband (or almost double sideband) suppressed carrier transmission cannot be received satisfactorily on anything other than a true selectable sideband receiver (i.e., a receiver with sufficient selectivity to attenuate the unwanted sideband 50 or 60db down) and there are still relatively very few receivers of this class in general use.†

The desirable parameters are a carrier suppression of at least 42db and an effort to achieve something better than this—say 55db, and a sideband suppression of not less than 35db. One of the greatest advantages of s.s.b. on the amateur bands is the absence of heterodynes. It would therefore be a great pity to lower the accepted standards of carrier suppression and have the heterodynes back again. Additionally the man working on the adjacent communication channel (on the suppressed sideband side) is perfectly happy if your signal is " clean " and the sideband suppression above average, but is obviously going to be in real trouble if your sideband suppression is below the acceptable average and you are therefore occupying 6 kc/s of bandwidth instead of the normal 3 kc/s.

Two Metre S.s.b.

Because of the high cost of suitable p.a. valves capable of running to the full licensed rating on 144 Mc/s the 2m a.m. operators have often to limit their power input to 50 watts or less. Single sideband offers a greatly increased power gain from the existing amplifier valve. There is therefore increasing enthusiasm for s.s.b. on 2m and the need for information

(*Continued on page 228*)

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

† G2DAF is referring here to amateur receivers. An alternative method has been developed by the U.S. General Electric Co., for commercial operation. This uses a synchronous detector and enables both sidebands to be received simultaneously.—EDITOR.

National Field Day 1960

N.F.D. Shield	**Stamford and District Group (G3ARS/P and G3FUR/P)**	**2,239 points**
Runners-up	**Stourbridge and District Amateur Radio Society (G3BMY/P and G8GF/P)**	**2,207 points**
Scottish N.F.D. Trophy	**Dunbartonshire Group (GM3KBZ/P and GM3ITN/P)**	**1,202 points**
Bristol Trophy	**Chelmsford Group (G6ZC/P)**	**857 points**
Leading 1·8 Mc/s Station	**Penarth Group (GW2XZ/P)**	**354 points**
Leading 3·5 Mc/s Station	**Stourbridge and District Amateur Radio Society (G8GF/P)**	**403 points**
Leading 7 Mc/s Station	**Gravesend Radio Society (G3JLB/P)**	**528 points**
Leading 14 Mc/s Station	**Stourbridge and District Amateur Radio Society (G8GF/P)**	**744 points**
Leading 21 Mc/s Station	**Stamford and District Group (G3FUR/P)**	**950 points**
Leading 28 Mc/s Station	**Edgware Group (G2IM/P)**	**53 points**

British Isles station contributing most points to competitors G3EYN

Overseas station contributing most points to competitors ZC4SB/P

FOR some years now the pundits have looked at Field Day results and said, " Wait until the sunspot activity declines—it will then be a three band affair with winning scores of about 900 points "! How wrong they were! for 1960 brings new record scores, the winner and runner-up both topping the 2,000 mark.

Stamford and District Group, under the calls of G3ARS/P and G3FUR/P, ran up a grand total of 2,239 including an almost unbelievable score of 950 points on 21 Mc/s—always their good band—but well supported on other bands. Since 21 Mc/s was introduced to N.F.D. in 1957, Stamford have done exceptionally well on the band, leading in 1957 and 1959 and coming second in 1958. After the 1960 effort it will be difficult to emulate their performance. In second place, but not very far behind are those veterans of successful contest activity, Stourbridge and District Amateur Radio Society, under the calls G3BMY/P and G8GF/P with a score of 2,207 including a best ever total on 14 Mc/s of 744 points. Two really outstanding performances and our warmest congratulations to Stamford and Stourbridge.

Gravesend Radio Society with 1,855 points, took third place and with their previous efforts (first in 1958 and 1959) they have an enviable record for Field Day operating. It is worthy of note that in the last three years Stamford, Stourbridge and Gravesend have had three firsts, three seconds, two thirds and one fourth between them! Almost a monopoly!

The Lower Frequencies

The writer of this report was one of the cynics who said that the change in scoring for Top Band and 3·5 Mc/s would this year hand the N.F.D. Trophy to a GW station. However, the DX bands were the undoing of this pessimistic (for some) forecast though the roll of honour shows GW2XZ and GW4CG well ahead of the field on Top Band. Strangely enough the additional points on 3·5 Mc/s have not produced the expected benefit to the " other than G " stations.

Chelmsford Group (G6ZC/P) were leading single station entry and their 857 points from Top Band, 3·5 Mc/s and 7 Mc/s shows that they made the best possible use of the operating time. Gloucester Group, as runner-up with 796, also did very well and employed the 24 hours to the best advantage.

Scoring Rate

Whilst on the subject of scoring it is interesting to note how high the rate has to be to get an entry into one of the leading positions. Stamford had an average of 93 points per hour for both stations whilst Stourbridge were close behind with a rate of 92. Chelmsford, with only one station operating, had a rate of 35 points per hour while Gloucester's was 33. However, when comparing these results one must also look at the points per contact rating; Stamford with an overall figure of 747 contacts giving 2,239 points (an average of just under 3) but Stourbridge with 712 contacts for 2,207 points averaged 3·1 and Gravesend with 603 contacts for 1,855 points averaged just under 3·1. Chelmsford, the leading single station entry, had 285 contacts on the three l.f. bands and scored 857 points—almost exactly three points per contact.

The Weather

During the summer of 1960 the weather was a source of much disappointment but the Field Day weekend seems to have been reasonably good although some stations suffered when high winds on the Sunday caused some concern. Wirral who had an array of masts and tents (including a marquee as a " dining-hall") had a tent ripped by a force 8 wind but they had been wise enough to double stake the masts and the operating went on unhindered. Edgware had some anxious moments when the wind threatened to push the " A " frame mast over sideways but prompt action by some heavy bodies saved the day! Scarborough had an enjoyable time but found the gale force wind was sufficient to move the gear along the table at times. Norwich had torrential rain on Saturday and a gale on Sunday but still enjoyed themselves while getting to eighth place despite the attentions of a four-footed female which wanted to invade the operations tent! Glasgow had winds gusting to 70 m.p.h. at times. A final comment on the weather by GW5VX " Must we always influence the weather—torrential rain at 2,000 ft. above sea level—is it worth it? "

Leading Stations

The Stamford " A " station, with G3ARS, G3JBQ and G3KHZ as operators, used a BC342 receiver and dipoles on Top Band and 3·5 Mc/s but on 14 Mc/s they used an eight element co-linear array. At the " B " station the operators were G3FUR, G3HES and G3KWC with a QV04-7 p.a. feeding a dipole on 7 Mc/s and cubical quads for 21 Mc/s and 28 Mc/s. The receiver was a home constructed double superhet with 25 valves! For power supplies the A station used a petrol electric set and B station had a diesel electric set.

Stourbridge " A " station, with G3BMY, G3HVX and G3KLT operating, used a CR100 receiver and a dipole for Top Band, two half waves in phase for 7 Mc/s and a quad for 21 Mc/s. Their transmitter deserves special mention as it

(Please turn to page 226)

NATIONAL FIELD DAY 1960—COMPLETE RESULTS

Posn.	Group, Club, Society, etc.	Call-sign(s) A Stn. *	B. Stn.	1·8 Mc/s	3·5 Mc/s	7 Mc/s	14 Mc/s	21 Mc/s	28 Mc/s	Total Points
1	Stamford & District Group ...	G3ARS	G3FUR	205 *	295 *	327	430 *	950	32	2239
2	Stourbridge & District Amateur Radio Society	G3BMY	G8GF	247 *	403	414 *	744	384 *	15	2207
3	Gravesend Radio Society... ...	G3FST	G3JLB	183 *	266 *	528	412	415 *	51	1855
4	Cannock Chase Amateur Radio Society	G3ABG	G4CP	249 *	347	431 *	499	283 *	30	1839
5	Port Talbot Radio Club	GW4CG	GW5VX	300 *	335	211 *	612	311 *	27	1796
6	Wirral Radio Society	G2AMV	G3NWR	261 *	366	149 *	503	423 *	—	1702
7	Weston-super-Mare Group ...	G5TN	G8FC	238 *	383	317 *	311	396 *	3	1648
8	Norwich & District Radio Club ...	G2YU	G3IVH	147 *	342	384	297 *	373 *	—	1543
9	Oxford & District Amateur Radio Society	G8PX	G2DU	256 *	313 *	376 *	168	352	19	1484
10	Norwood & South London Group	G3IIR	G8GP	188 *	321 *	503	275	165 *	18	1470
11	Mitcham Group	G3NFA	G3HQX	222 *	385 *	393	307	128 *	20	1455
12	Edgware & Hendon Group ...	G5FG	G2IM	132 *	316	368 *	433	131 *	53	1433
13	City & County of Bristol Group	G2IK	G6GN	270 *	342	425 *	136	243	—	1416
14	Reigate Amateur Transmitting Society	G3BBR	G2AJS	191 *	207 *	391	334	244 *	—	1367
15	Croydon Group	G3BFP	G4QK	196 *	293	365 *	284	173 *	30	1341
16	Scunthorpe Group	G3JWR	G3KNU	246 *	354	403 *	127	143 *	8	1281
17	York Amateur Radio Society ...	G3DTA	G3IDC	209 *	274	198 *	517	26 *	17	1241
18	Slough Group	G6NA	G3XH	185 *	278 *	341	237	199 *	—	1240
19	Bury & Rossendale Group ...	G2GA	G3BRS	204 *	309	376 *	63	254	4 *	1210
20	Dunbartonshire Group	GM3KBZ	GM3ITN	196 *	328	293	385 *	—	—	1202
†	East Molesey Group	G5LC	G8SM	194 *	339 *	448 *	52	110	18	1161
‡	South Birmingham	G3LNS	G3ITH	223 *	399	351 *	69	112	—	1154
21	Coulsdon & District Group ...	G2DN	G3DVQ	196 *	254	365 *	124	161	—	1100
22	Barnsley & District Amateur Radio Club	G4JJ	G5IV	245 *	327	366 *	161	—	—	1099
‡	Flintshire & Conway Valley Radio Society	GW3JGA	GW3JI	199 *	313 *	286	42	255 *	—	1095
23	Sutton & Cheam Radio Society ...	G4DH	G8DF	231 *	301 *	341	185	36	—	1094
24	Medway Group	G2ZP	G2BP	105 *	175	248 *	525	35 *	—	1088
25	Scarborough Group	G2YS	G2CP	142 *	325	398 *	162	38 *	4	1069
26	Liverpool & District Amateur Radio Society	G3LNG	G8DI	102 *	239 *	196 *	242	288	—	1067
27	Crawley Amateur Radio Club ...	G8FR	G3FRV	259 *	290 *	387	26	102	—	1064
28	Glasgow Group	GM6IS	GM3CSM	101 *	274	323 *	249	77 *	30	1054
29	Belfast Group	GI3GAL	GI6YM	260 *	185	259 *	212	136 *	—	1052
30	Grimsby Amateur Radio Society	G4XC	G2AJB	187 *	189 *	150	361	114	39	1040
31	Cheltenham Group	G3CGD	G3YZ	245 *	274 *	212	137	170	—	1038
32	Acton, Brentford & Chiswick Group	G5LQ	G3IIU	140 *	285 *	416	50 *	110	—	1001
33	South Shields & District Amateur Radio Club	G3ELP	G3LKZ	101 *	310	224	249	103	—	987
34	Danbury Group	G3IIS	G3VI	212 *	394	263	73	28 *	—	970
35	Exeter Group	G3JW	G3ID	86 *	308	261	207	102 *	—	964
36	Sheffield Group	G8NN	G5TO	256 *	349 *	253	74	28	—	960
37	Blackpool Group	G8GG	G5ND	205 *	187	324 *	217	10 *	—	943
38	Hull & District Radio Society ...	G2FS	G3CSE	151 *	276	304 *	145	54 *	—	930
39	Aberdeen Town Group	GM6IZ	GM3EOJ	131 *	279	172 *	205	124 *	3	914
40	Hartlepools Group	G3AWL	G3CHJ	102 *	298	231 *	116	152 *	—	899
41	Thanet Area Group	G2JF	G2IC	221 *	358 *	250	69	—	—	898
42	Ilford Group	G3HIW	G3AMF	203 *	328 *	323	34	—	—	888
43	Torbay Amateur Radio Society ...	G3GDW	G3NJA	177 *	74	328 *	79	208	21 *	887
44	Carryduff Group	GI6TK	GI3AV	262 *	166	273	156 *	26 *	—	883
45	Leicester Radio Society	G5YY	G2DSF	103 *	290	351	127 *	10 *	—	881
46	Dorking & District Radio Society	G2DOT	G3IAM	237 *	267	221 *	12	137	5 *	879
47	Southampton Group	G3MDH	G3JLS	95 *	363	290 *	89	39	—	876
48	Enfield Group	G3FD	G2NR	150 *	227 *	484	—	—	—	861
49	Chelmsford Group	G6ZC	—	253	308	296	—	—	—	857
50	Lothians Radio Society	GM3UM	GM3BQO	155 *	180 *	286	60	163 *	—	844
51	Derby & District Amateur Radio Society & Derby Short Wave Experimental Society	G3ERD	G3EEO	201 *	190	318 *	69	45	—	823
52	Boston Group	G6GH	G6LH	193 *	308	220 *	—	94	—	815
53	Portsmouth & District Radio Society	G6NZ	G3DIT	175 *	178 *	340	28 *	83	3	807
54	Lowestoft & Great Yarmouth Groups	G2UK	G6ZG	192 *	228	269	70 *	45 *	—	804
55	Gloucester Group	G3MA	—	253	253	290	—	—	—	796
56	Rotherham Group	G2LG	G3OAM	269 *	193	124	92 *	117	—	795
57	Southgate Group	G5FA	—	168	284	303	—	—	—	755
58	Pontefract Group	G3US	—	267	174	298	—	—	—	739
	Wolverton Amateur Radio Club	G3LCS	G3IYX	199 *	125 *	126 *	173	116	—	739
60	Welwyn Garden City Group ...	G5UM	—	197	258	273	—	—	—	728
61	Macclesfield & District Radio Society	G3LDT	G3ATK	160 *	337	180	49 *	—	—	726
62	Ayrshire Group	GM2BUD	GM3NMN	54 *	257	207 *	148	39 *	4	709
63	Stockport Radio Society	G3BY	—	101	314	291	—	—	—	706
†	Barnet & District Radio Club ...	G3FFA	—	171	293	238	—	—	—	702
64	Penarth Group	GW2XZ	—	354	293	—	—	33	—	680
65	Harlow & District Radio Society	G3ERN	—	123	258	298	—	—	—	679
66	Lincoln Short Wave Club ...	G4BU	—	156	255	255	—	—	—	666
	Brentwood Group	G3LST	—	132	300	234	—	—	—	666
68	Pontypool Group	GW3LDC	GW3AJ	213 *	125 *	96 *	57	162	—	653
69	High Wycombe Group	G5WW	—	26	302	321	—	—	—	649
70	North Kent Radio Society ...	G2ATD	G3FBA	117 *	315	179 *	25	—	—	636
71	Huddersfield Group	G3KKP	—	136	297	199	—	—	—	632
72	Southend & District Radio Society	G5QK	—	185	140	298	—	—	—	623
73	Ballymena Radio Club	GI3DZE	GI3FFF	—	119	254 *	230	8 *	—	611
74	Shefford & District Group ...	G2DPQ	—	131	251	221	—	—	—	603
75	Decca, Kingsbridge Group ...	G4RJ	—	239	129	231	—	—	—	599
76	Herne Bay Group	G3HEH	—	25	148	425	—	—	—	598
77	Guildford & District Radio Society	G3IAF	—	198	276	—	119	—	—	593
78	Stroud Group	G5ZK	—	116	199	266	—	—	—	581
79	Cardiff Town Group	GW5BI	—	—	—	436	125	—	—	561
80	E.M.I.E. Radio Section	G3GZA	—	—	261	183	110	—	—	554
81	Kingston & District Amateur Radio Society	G3KIN	—	149	222	178	—	—	—	549
	Chingford Group	G8JM	—	—	154	298	97	—	—	549
83	Purley & District Radio Club ...	G3JSQ	—	—	315	189	36	—	—	540
84	Cambridge University Wireless Society	G6UW	—	—	253	226	52	—	—	531
85	Southport Radio Society ...	G3MJU	G2ART	152 *	176 *	155	36	—	—	519
86	West Kent Amateur Radio Society	G2UJ	—	—	132	264	116	—	—	512
87	Dunfermline Group	GM3EGU	—	—	280	151	56	—	—	487
88	Plymouth Radio Club	G3KFN	G3JYB	62 *	193	138 *	4	78	—	475
89	Newark Group	G3ELJ	—	—	230	160	75	—	—	465
	East Kent Radio Society ...	G3LTY	—	150	106	209	—	—	—	465
91	Bath Group	G2ZR	—	—	174	174	109	—	—	457
92	Aberdeen Amateur Radio Society	GM3BSQ	—	—	83	59	307	—	—	449
93	Clifton Amateur Radio Society ...	G3GHN	—	—	145	244	55	—	—	444
	South Manchester Radio Club ...	G3FVA	—	—	223	221	—	—	—	444
95	Dundee Group	GM3EUV	GM3KYI	84 *	98	89 *	71 *	101	—	443
96	Harrow Weald Group	G3NQR	—	186	161	94	—	—	—	441
97	Ainsdale Radio Club	G2CUZ	G3DQX	126 *	150 *	88	68	—	—	432
98	Blandford Group	G2HCD	—	110	171	138	—	—	—	419
99	Newbury & District Amateur Radio Society	G3LLK	—	95	197	125	—	—	—	417
100	East Ham Group	G3JYZ	—	15	174	157	—	—	—	346
101	Deal Radio Club	G3LCW	—	—	331	—	4	—	—	335
102	Cornish Radio and Television Club	G8AW	—	—	215	—	108	—	—	323
103	North Notts Radio Club ...	G6MN	—	30	—	266	—	26	—	322
104	Bradford Amateur Radio Society	G3KSS	—	97	206	3	—	—	—	306
105	Peterborough Radio Society ...	G2NJ	G3HPO	88 *	127	—	77 *	11 *	—	303
	Bailleul Radio Society	G3IHH	—	95	149	59	—	—	—	303
106	Stoke-on-Trent Amateur Radio Society	G3GBU	—	—	144	10	117	—	—	271
107	Stevenage and District Group ...	G3FAU	—	93	—	100	—	59	—	252
108	Ravensbourne Amateur Radio Club	G3HEV	—	177	—	—	—	—	—	177

† Denotes excess power.
‡ Denotes late entry.

uses a 6J6 v.f.o. and SP61 crystal oscillator with buffer amplifiers and cathode followers feeding into a SP61 mixer followed by another buffer amplifier and an 807 p.a. The B station, with only G8GF and G3HXI as operators, used an HRO-5T, a dipole on 3·5 Mc/s and a quad for 14 Mc/s and 28 Mc/s were supplied with r.f. by a transmitter going to the other extreme—a Geloso v.f.o. driving a 6146 p.a. However, both transmitters produced very satisfactory results! Power supplies were from 12 volt accumulators and rotary converters.

Gravesend " A " station was operated by G3FST, G6QB and G6VC and for Top Band and 3·5 Mc/s they used a 270 ft. centre fed aerial and a quad for 21 Mc/s. The receiver was an HRO with a converter for 21 Mc/s. The " B " station had two operators, G3IEW and G3JCB, and they used a G8KW trap dipole on 7 Mc/s, 14 Mc/s and 28 Mc/s. The receiver was an SX101A and power for both stations came from petrol electric generators.

Chelmsford's single station was operated by G2HPF and G3KTF. They used a v.f.o.—wide band multiplier—807 p.a. transmitter and a Marconi " Atalanta " receiver. The aerial was 270 ft. long for all three l.f. bands. The power supply was a 500 watt petrol electric generator set.

DX Worked on 14, 21 and 28 Mc/s

G.M.T.	14 Mc/s	21 Mc/s	28 Mc/s
17.00	VE2, VQ4	HB, ZC4, ZB1, ZD2, ST, W1, 2, 3, 5, 9, 0	
18.00	D, HB	ZB1, ZC4, ZD2, ZS, VQ2, VE2, 3, ST, W1, 2, 3, 4, 5, 8, 4X4	
19.00	D, HB, W2	XE, UT5, VE2, HB1, ST, ZC4, W2, 4, 5, 6, 8, 9	
20.00	D, OH, ZC4, VE2, VQ4, W1, 2, 4, 7, 4X4, VK5	HB, VE1, 3, ZD2, W1, 2, 3, 4, 5	
21.00	UC2, VE2, W1, 3, 0	VQ4, HB, W2, 4, 5, 6, 8, 9, 0	
22.00	VE2, ZB1, W1, 3, 4, 7, 8, 9	VE3, LU, ZC4, W1, 2, 3, 4, 5, 8, 9	
23.00	ZC4, VE1, 3, W1, 2, 3, 4, 6, 7, 8, 9	VK5, VE1, 3, W1, 2, 3, 4, 5, 8, 9, 0	
00.01	VE1, W1, 2, 3, 4, 5, 6, 8, 9, 0	VE3, W1, 2, 3, 4, 5, 7, 8, 9, 0	
01.00	UA4, W1, 2, 3, 4, 6, 8, 9, 0	XE, W2, 3, 4, 6, 8, 9, 0	
02.00	HB, VE3, W1, 2, 3, 4, 8, 9	HC, VE4, OA, W1, 5, 6, 7, 8, 9, 0	
03.00	VE2, 3, VP9, W2, 3, 4, 5, 7, 8, 9, 0	VE6, W2, 4, 5, 6, 0	
04.00	VE2, 3, VP3, W1, 2, 3, 4, 5, 6, 8, 9, 0	W1, 5, 6, 9, 0	
05.00	ZC4, VE1, 3, 7, W1, 2, 3, 4, 5, 6, 8, 9, 0	W4, 5, 6, 7, 0	
06.00	VE1, UA1, W1, 2, 3, 4, 7, 8, 9, 0	W6	
07.00	W4, 5, 6, 8, 9, 0	OH	
08.00	D, LA, SM, OK, W4, W9	EA, ZC4, UA1, KL7	
09.00	D, HB, OK, OZ	OE, OH, UA2, ZD2, HB, VP9	
10.00	D, HB, I, W9	DL, UA6, 9, 5A2, OE, VP3	VQ4, CR6, CT
11.00	D, HB, UB	5A2, W1, TF	ZS1, VS1
12.00	D, HB, OK, ZB1	DL, HB, OE, SV, UA3, VE2, W4, ZC4, ZD2, PA, VQ4, 5A2	HB, ZE
13.00	ZB1, UP2, EA, I, VE1, HB, D, W1	D, VE1, ZC4, UD6, W2, 3, 9	ZC4, 5A2
14.00	DL, HB, OH, VE1	VE1, VE2, W1, 2, 3, 4, 6, 8, 9, 0	
15.00	DL, FA, HB, UA4, UC2, VE6, ZC4	VP3, W1, 2, 3, 4, 6, 8, 9, ZB1, ZD2, 5A2	
16.00	D.	JA, W1, 2, 3, 4, 5, 6, 7, 8, 9, 0, ZB1	
17.00	D, OK	VE1, 2, 3, W1, 2, 3, 4, 6, 7, 8, 9, 0	

G3NWD (left) and G3IWL operating the Clifton Radio Society's G3GHN/P during N.F.D.

(Photo by G3HVO)

Band Conditions

Top Band was so poor that generally contacts were only made between about 20.00 G.M.T. on Saturday and 04.00 G.M.T. on Sunday. In all of the first fifty stations there were not more than half a dozen contacts after 04.00 and these were generally the odd local station coming on for a short time.

3·5 Mc/s. The main activity on this band was from the start on Saturday at 17.00 G.M.T. until about 22.00 although a few stations did press on during the night. Activity was renewed at about 07.00 on the Sunday until midday but apart from the clearing up process in the last hour or so there was little further activity. Non-contest stations were sparse and only a few contacts with PA, ON, D, EI and HB stations were made.

7 Mc/s. Most stations were active on this band between 03.00 G.M.T. Sunday and about 11.00 G.M.T. although a few started off on Saturday on 7 Mc/s. As on the other bands there was a clearing up process during the last hour of Sunday. The D, HB and ON stations provided most activity outside the contest with a few Ws appearing in the early hours of the morning.

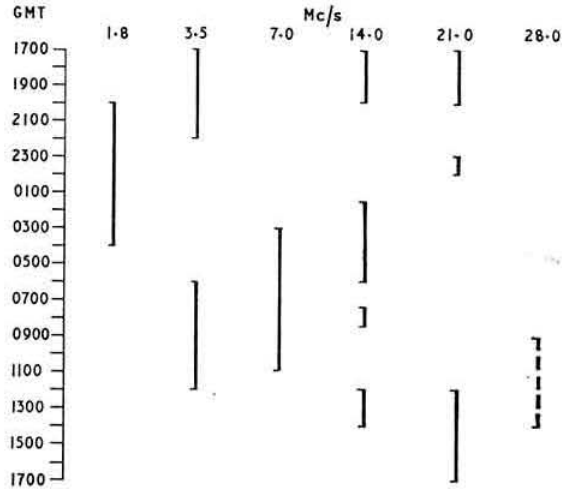
14 Mc/s. Those stations that tried 14 Mc/s on Saturday did not find the going very good but about 01.30 on Sunday morning the band burst into life with Ws pouring in. This went on until 06.00 when the band seemed to close down suddenly and apart from some activity around 08.00 and 09.00 there was little doing until 12.00 when again there was a burst of activity until 14.00. Thereafter there were few contacts and practically none towards the end.

21 Mc/s. The band was open until about 20.00 on Saturday and then for an hour or so around 23.00–midnight. After that there was little doing (except for Stamford who kept going without a break until 05.45 by which time they had had 213 contacts worth 670 points!) until around 11.00 on Sunday

when the activity increased and things went briskly for the rest of the afternoon.

28 Mc/s. Such contacts as there were on this band were between about 10.00-14.00 on Sunday but as can be seen from the scores there was very little activity. ZC4FD/P and ZC4SB/P (both 12 pointers) deserve the thanks of those stations which used this band for providing a little excitement and interest in an otherwise disappointing day.

The above comments on band activity are shown graphically below so that those who may be thinking of new tactics to get to the top and who may want to re-allocate



Band activity during National Field Day 1960.

frequency bands may see when the leading stations are active. It must be borne in mind, of course, that with two stations restricted to three bands each there must as ever be a certain amount of compromise. The blank spaces do not necessarily mean that there was no activity but rather that the level of contacts by most stations had dropped below some eight or nine per hour (except for 28 Mc/s). Remember that to get to the top you must average 15 contacts per hour for each station!

Equipment

The equipment used varied considerably but special mention must be made of the receiver in use at G3FUR. It uses banks of crystal controlled converters feeding into a tunable i.f. strip at 1·5-2 Mc/s and the direct calibration can be read to 0·25 kc/s. The second i.f. is at 465 kc/s and uses a phasing type crystal filter, half and full lattice filters, linear detector and *Q* Multiplier. In all it uses 40 valves—25 of which are in circuit at one time—no wonder they can " winkle 'em out " on 21 Mc/s!

Hull (G2FS) had a home built receiver which employs an HRO four gang condenser and coils but from there onwards it is a very different affair. It uses B7G based valves in a double superhet circuit (456 kc/s and 85 kc/s), crystal controlled second oscillator, product detector (6BE6), noise limiter (6AL5), 100 kc/s marker and stabilized oscillator voltage.

Macclesfield also had a home built receiver but it requires no further description here as it is the very fine single sideband receiver described in the R.S.G.B. BULLETIN for August 1959 and which incidentally won the Ostermeyer Trophy for 1959.

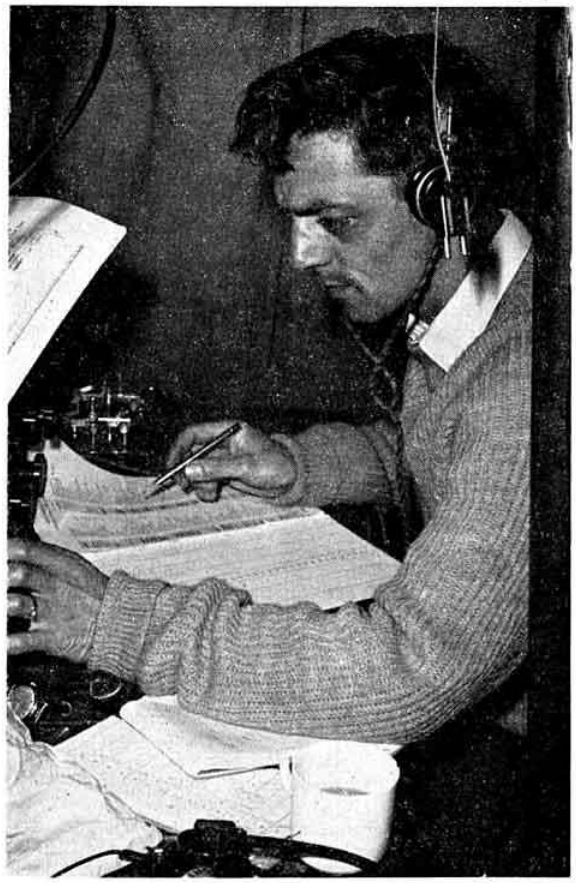
Most stations used commercial receivers, however, and the old faithful HRO is still very much the favourite, being used by nearly one third of the stations. The AR88 is still second favourite although the Eddystone 888A is coming up.

In a scrutiny of over 50 logs there were 19 HROs, nine AR88s, six 888As, five 640s, three CR100s, two AR77s, two HQ120s, two German types and finally a Collins 51J, Hallicrafters SX101A, Marconi " Atalanta " and Racal RA17B!

Aerials in use were not quite so varied as in the past but even so there was still a wide scope. On the lower frequency bands the dipole is favourite although some stations went to more trouble—Wirral used Vee beams with 600 ohm feeders on both stations and found no difficulty in getting the masts up and everything organized before zero hour. Norwood and South London used two colinear phased dipoles on 7 Mc/s while Croydon had two aerials on 7 Mc/s, 264 ft. and 132 ft., both end fed.

On the high frequency bands the cubical quad is popular. In view of the present restriction on the use of tubing for elements, the quad seems to be just the thing to use and Stourbridge showed how effective it can be! Vee beams were also popular—Norwich, Oxford, York and Grimsby each used one. Mitcham had a " Lazy H " on 14 Mc/s with tuned feeders and, to quote, " Agreed that it has earned its keep." Bristol had a " triple orientated extended double Zepp." Coulsdon used a dipole and a ZL Special on 14 Mc/s.

On 21 Mc/s Stamford, Stourbridge and Gravesend all used quads. On 28 Mc/s Portsmouth had 500 ft. of wire end-fed, made three points and said " was it worth all that tuning up ? "



G3HVX, well-known as a contest operator in his own right, on duty at G3BMY/P of the Stourbridge and District Group.
(Photo by G3BMY)

What you say about N.F.D.

First comment must come from **Stamford** and looking at their 950 points on 21 Mc/s what better than their remarks on the log for that band " . . . this band plan allowed us to make full use of what can only be described as the best ever opening on 21 Mc/s for N.F.D.—and of course taking off from a ' pimple on a billiard table ' is a great help." **Stourbridge** commented " . . . the Yanks came up trumps."

Gravesend.—" . . . Strong objection for bonus points to GW and GM entrants on l.f. bands." **Cardiff**—" . . . now that the remoteness of GW and GM has been recognized for N.F.D. . . .". **Cheltenham**—" Fully support the extra points on 1·8/3·5 Mc/s for inter-U.K. QSOs."

Mitcham.—" Guywire failed on one mast—mast down and up again in 15 minutes flat ". **Glasgow**—on weather—" Why choose Buchan's ' Cold Spell '? "—on aerials—" the simple co-ax fed dipole outperforms the 1,200 ft. long wire used last year! " **Enfield**—" Standard of operating was good on this band (7 Mc/s)—speed of contacts much higher this year." **Wolverton**—" Can we abolish this terrible BK at the end of a CQ? " **High Wycombe**—" BK—on one occasion we listened to three stations ' working " one another simultaneously." **Herne Bay**—" Hard graft—only one operator and one B.R.S.! " (A station). **Cannock**—" Conditions and rules satisfactory . . . some extremely poor operating on this band (7 Mc/s) with indecipherable call-signs." **Macclesfield**—" . . . no sound reasons for excluding the use of a vertical rod or whip; the stipulation that it must be used as a mast should be abolished." **Ballymena**—" operation halted at 12.35 G.M.T. as equipment damaged by adverse weather conditions." **Mitcham** " Our v.h.f. enthusiasts would like to see 2m included in N.F.D."

And finally—a plea from down Dorset way but one which will be echoed all over the country—" Every N.F.D. station was calling on ' our ' frequency for a spell and very few made QSOs—can it be made a rule that each must contact us before anyone else? "

What the Contests Committee say about you

Log keeping was generally very good but there are still stations which lose points through not ensuring that they are in contact with the other station—possibly due to the abuse of " BK." For the guidance of scribes—each log should show a separate total of points and then these totals should be transferred to the summary sheet and a final total made.

Rules. It will be noticed that some stations appear without a placing—two for excess power declarations and two for late entries. In fairness to all Rule 11 must be enforced—the only evidence of the power input is on the declaration sent in with the logs and it therefore behoves the T.R. or A.S.R. to make sure that the operators do not push the power above the 10 watt limit on all bands. There are complaints that stations do not wait to receive an acknowledgment of RST and serial number and subsequently refuse to have another contact or to give repeats of the previous data. It is fundamental to any contest of this nature that both sides must give acknowledgment of the message—therefore, if a station has not waited to hear that his report has been received the contact is not completed and should be logged but not claimed for points. This may sound hard for the receiving station as it loses the points but it will mean that the offending transmitter will lose points for all these contacts.

The task of writing this report falls to one member of the Contests Committee. On Field Day he was more interested in the progress of his own group than in the fortunes or misfortunes of his competitors. Therefore the report had to be compiled from the comments made on the log cover sheets, accompanying letters or postcards. Any comments critical, congratulatory, or comical are welcome and they will be examined, accepted or enjoyed respectively.

Check logs are gratefully acknowledged from 5A2CV (G3BBF and G3LCV), EI9F/P, G2MI, G2VV, G3ABM, G3BQR, G3EIW/P, G3EYN, G3HSM, G3INQ, G5KT, G6CJ, G6ZT, OK1ABE, PA0VF, UC2AR, VE2AYX, VQ4CW, W7UQP and ZC4SB/P.

Radio ZS

MR. RENO FABER (ZS6OF), who is an Overseas Corporate Member of the R.S.G.B., was recently appointed Editor of *Radio ZS*, journal of the South African Radio League.

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.

Single Sideband (Continued from page 222)

on the most suitable method of converting the output of an existing s.s.b. exciter up to the frequency required to drive the 2m power amplifier.

A very satisfactory, yet relatively simple method has been developed by G3LNP and a number of 2m s.s.b. stations have copied his design and are obtaining excellent results.

Full details will be given in *Single Sideband* next month.

Convention 1960

An Account of the Fourth Post-war National Convention of the Radio Society of Great Britain

IT would be difficult to find a place anywhere in the United Kingdom better suited for the holding of a National Convention than the University City of Cambridge, for not only has it much of technical interest to offer but the city itself, with its ancient colleges and magnificent vistas can provide untold pleasure for all who enjoy dignity and great beauty. The choice of Cambridge as the venue for the Society's fourth post-war National Convention was fully justified even if the ultimate attendance fell somewhat below earlier expectations.

It is doubtful whether the programme of technical lectures and visits has ever been surpassed at any previous R.S.G.B. Convention; indeed the quality was of such a high order that those who were privileged to listen left with the certain knowledge that here indeed was a treat seldom offered to even the most advanced professional worker.

Opening Ceremony

The Convention was formally opened at midday on Thursday, September 15, 1960, by the Mayor of Cambridge (Mr. Councillor Cecil A. Mole, J.P.) who was accompanied by the Mayoress (Mrs. Mole).

The Chair at the opening was taken by Mr. L. E. Newnham, B.Sc. (G6NZ), Penultimate Past President, who had the platform support of the Honorary Treasurer (Mr. Norman Caws, F.C.A., G3BVG), the Chairman and Secretary of the Convention Committee (Mr. T. A. T. Davies, G2ALL and Mr. Howard Waton, G3GGJ) and the General Secretary (Mr. John Clarricoats, O.B.E., G6CL).

The Mayor in his speech expressed pleasure that the Council of the Society had chosen Cambridge for their 1960 Convention. He spoke of the enthusiasm which the Chairman and members of the Convention Committee had shown in their work and expressed the hope that all attending the Convention would find time to enjoy the delights of Cambridge in addition to benefitting from the many technical lectures and visits that had been arranged.

Mr. Caws thanked the Mayor on behalf of the Council for opening the Convention and then invited him and the Mayoress to visit the Convention station and tour the Exhibition.

At the end of their official tour the Mayor was entertained to lunch by members of the Council and Committee at the Bridge Hotel, Clayhithe, whilst the Mayoress was similarly entertained by the ladies at the Arts Restaurant.

Cambridge—City and University

Later in the afternoon Mr. Arthur Porter (B.R.S.15091) gave an introductory talk on Cambridge and this was followed by a tour of the city.

After dinner, Alderman G. E. Hickson, M.A. (a University member of the City Council) delivered a very much appreciated illustrated talk on " Cambridge City and University." Alderman Hickson was thanked by the General Secretary, who remarked that it was for him and doubtless for many others present, a special pleasure to be given so much interesting information about the venue chosen for Convention. In that connection the gesture on the part of W. Heffer & Sons Ltd., the world famous booksellers of Petty Cury, in presenting to all Convention visitors a specially printed edition of Ruth Mellanby's *Cambridge in Brief* was most warmly appreciated.

Guildhall Reception

Members of the Council and the Committee with their ladies were guests of the Mayor and Mayoress of Cambridge at the Guildhall during the evening of September 15, 1960. On that occasion opportunity was taken to initiate the Mayor still further into the " mysteries " of Amateur Radio.

A view of the Convention station, GB2CAM, which was in operation on 1.8-28 Mc/s and on 144 Mc/s.

Breadth of Vision

" Fundamental Research and Practical Telecommunications " was the official title of Mr. J. A. Ratcliffe's lecture delivered at 9.30 a.m. on Friday, September 16, 1960, but its scope and breadth of vision pleased and surprised the large audience.

During the lecture Mr. Ratcliffe paid high tribute to the pioneer achievements of amateurs and caused a mild sensation by providing documentary evidence to show that Ernest Rutherford, whilst at Cambridge in 1895, carried out successful experiments in wireless transmissions some time before Marconi demonstrated his apparatus to Sir William Preece. Rutherford's original magnetic detector was shown to the audience and examined with special interest by the Chairman of the meeting (Mr. L. E. Newnham, B.Sc., G6NZ) who has made a close study of the early days of wireless.

Microwaves and Masers

During Friday, September 15, visits were made to the Engineering Laboratories of the Cavendish, the *EDSAC II* Mathematical Laboratory, the I.T.A. 7000 Mc/s link at Barkway, and to Little Barford Power Station. Visits were also made to Chivers Jam Factory at Histon and to the Guildhall to inspect the civic regalia.

The lecture programme for that day covered a very wide range of subjects from " Microwave Radio Link Equipment " (T. P. Blott—Chairman, G. M. C. Stone, G3FZL) to " Telecommunications in the Body " (P. E. K. Donaldson, M.A.—Chairman, F. A. E. Porter, B.R.S.15091); from " Recent Developments in Microwave Valves " (A. H. Beck, M.A., B.Sc.—Chairman, R. C. Hills, B.Sc.(Eng.), G3HRH) to " Recent Developments in Semi-Conductors " (T. D. Towers, M.B.E., M.A., B.Sc., ex-VP2GM—Chairman, G. M. C. Stone, G3FZL); from " Low Noise Receivers using Masers and Parametric Amplifiers " (F. G. Smith, M.A., Ph.D.—Chairman, A. O. Milne, G2MI) to " Whistling Atmospherics " (B. H. Briggs, M.A., Ph.D., ex-G2FJD—Chairman, R. C. Hills, B.Sc.(Eng.), G3HRH).

Conversazione

One of the high-lights of Convention in pre-war days—when it was an annual event in London—was the Conversazione and Buffet. The tradition which began at Pinoli's more than 30 years ago and carried on later at The Florence, was revived after the war, with the result that the Friday night of Convention has always been set aside for the pleasant purpose of eating, drinking and rag-chewing.

The arrangements made at Cambridge this year were excellent in every way and the atmosphere was especially cordial. If those present could have chosen a theme song for the evening it would have been " Getting to Know You." All in all, it was a very pleasant evening.

Mullard Radio Observatory

Those who were privileged to listen to Professor Martin Ryle, F.R.S. (G3CY), discourse on the Mullard Radio Observatory during the first lecture session on the Saturday morning will not easily forget the infectous enthusiasm he conveyed to his most attentive audience.

It was 12 years earlier—in April 1948—that Martin Ryle (then little known outside the Cavendish Laboratory, Cambridge) delivered the very first lecture in the United Kingdom on radio astronomy to a meeting of R.S.G.B. members at the Institution of Electrical Engineers. Today Professor Ryle holds the Mullard Chair of Radio Astronomy at Cambridge and is among the leading authorities in the world on that subject. His lecture at Convention showed clearly that he is still very much an amateur at heart and the fact that he, personally, led the team of scientists who conducted Convention visitors around the Radio Observatory at Lord's Bridge later in the day was an indication of his regard for the Society and its members. (It had been assumed that Professor Ryle would leave the conducted tour to members of his staff.)

During his lecture in the morning Professor Ryle referred to the importance to science of Radio Astronomy and spoke of the difficulties that will arise if the special frequencies which have been set aside for the study of outer space are interfered with by " intruders." The Chairman of the meeting was Mr. Arthur Milne, G2MI. (It is a matter of historical interest that Mr. L. E. Newnham, G6NZ, who was present when Professor Ryle lectured during Convention was responsible for proposing a vote of thanks to him after he had delivered his lecture to the Society on April 9, 1948. The title of his lecture on that occasion was " Radio Signals from the Sun "—EDITOR.)

Other lectures delivered during Convention Saturday were " Single Sideband " (G. C. Bagley, G3FHL—Chairman, G. M. C. Stone, G3FZL), " Industrial Television (I. Waters, G3KKD/T—Chairman, L. E. Newnham, B.Sc., G6NZ) and "The Electronic Telephone Exchange" (D. Delanoy, G3FOQ —Chairman, R. C. Hills, B.Sc.(Eng.), G3HRH). Visits were made to the Pye Telecommunications Factory, Ely Cathedral and Sawston Hall.

Discussion Groups

During the late afternoon groups of members met to discuss DX, s.s.b., Mobile, v.h.f., RTTY and ATV, each under the chairmanship of a specialist. Curiously enough the group which attracted one of the smallest audiences was the one discussing DX. How times change!

Convention Dinner

No Convention would be complete without a formal dinner. The Cambridge dinner followed closely to the usual pattern with the Mayor and Mayoress as the chief guests supported by a number of other distinguished guests including Major-General Eric Cole, C.B., C.B.E. (ex-G2EC) and Mrs. Cole, Brigadier E. J. H. Moppett, M.I.E.E., and Mrs. Moppett, Dr. F. G. Smith, M.A., and Mrs. Smith.

The toast to the Mayor and Corporation of Cambridge was proposed by the General Secretary and the Mayor responded. Mr. L E. Newnham proposed a toast to the University of Cambridge and Dr. F. G. Smith replied. Brigadier Moppett proposed a toast to the Society and the President (Mr. W. R. Metcalfe, G3DQ) responded.

The Chairman of the Convention Committee (Mr. T. A. T. Davies, G2ALL) welcomed the male guests and thanked the ladies for their support. Responses were made by Major-General Cole and Mrs. P. E. M. Porter.

At the conclusion of the formal proceedings a raffle took place for a number of prizes purchased by the Convention Committee.

Attendance

An attendance of 220 was recorded at the dinner but the total number who attended Convention was probably of the order of 250.

The Committee had planned their very full programme on the basis of an attendance of 350 during the Saturday. The fact that this figure was not reached is a serious reflection on the lack of interest shown by members resident within a short distance of Cambridge, notably London and the East Midlands.

Those who attended Convention thoroughly enjoyed the programme provided. It is a pity that more did not support the efforts of the team of men and women who had laboured so long and so enthusiastically to make the event the success that it was.

Exhibition

Throughout the period of the Convention a display of electronic equipment attracted widespread interest.

The exhibition station, which operated under the call-sign GB2CAM, consisted of three separate transmitters and receivers. The equipment and aerial systems were loaned various individual members and a number of manufacturers.

Convention Committee

The Convention was organized by a Committee consisting of Messrs T. A. T. Davies, G2ALL (Chairman and Regional Representative), A. H. G. Waton, G3GGJ (Hon. Secretary and Town Representative), F. J. Walters, G3LIE (Hon. Treasurer), F. A. E. Porter, B.R.S.15091 and A. W. Tomalin, B.R.S.22400 (Accommodation and Programme), H. C. L. Barnett, G2AIQ (Publicity), J. N. Carter, B.R.S.6174 (Transport), A. D. Wiles, G3BBY and R. F. Pilkington, G3IAG (Display) and D. Smart, G3MGB (Convention Station). Mrs. P. E. M. Porter assisted the Committee in very many directions as did the wives of several other Committee members.

R.S.G.B. Stand

Throughout the period of Convention a stand displaying R.S.G.B. literature and other material was operated by May Gadsden and Jeanette Mason from Headquarters. —J.C.

Annual Report of the Council

THE Report which follows deals with the activities of the Society during the year ended June 30, 1960, and makes reference to the more important events and happenings that took place during that period. A Supplementary Report covering the period from July 1, 1959, to the early part of December 1959, was submitted to the Annual General Meeting of the Society held on December 13, 1959. The Supplementary Report was published in the February 1960 issue of the Society's Journal.

Membership

It is with pleasure the Council report that the membership of the Society passed the 10,000 mark during the year under review. Thus, for the fourth year in succession, an increase in membership can be recorded. The net gain amounted to 496 compared with a net gain of 445 last year. At June 30, 1960, the total membership was 10,036 compared with 9,540 a year earlier.

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

Grade	June 30 1958	June 30 1959	June 30 1960	Gain over previous year
Corporate Members:				
Licensed	5898	6349	6473	124
Not Licensed ..	2768	2592	2756	164
Associates	429	599	807	208
	9095	9540	10036	496

As in former years an analysis has been made to ascertain the number of members who were licensed to operate an Amateur Transmitting station. This shows that as at June 30, 1960, 64 per cent of all Corporate members held a transmitting licence compared with 66 per cent a year earlier.

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

Grade	June 30 1958	June 30 1959	June 30 1960
Corporate Members: (Licensed) ..			
Country	3575	3840	3963
London	1224	1266	1325
Overseas	1099	1243	1185
	5898	6349	6473
Corporate Members: (not Licensed)			
Country	1788	1645	1766
London	792	747	793
Overseas	188	200	197
	2768	2592	2756
Associates	429	599	807
TOTALS	9095	9540	10036

For the purposes of this Report, London members are those who reside 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.

At June 30, 1960, a total of 8,729 United Kingdom Amateur (Sound) Licences were in force compared with 8,463 as at the same date last year and with 8,190 a year earlier. At June 30, 1960, a total of 889 Mobile and 79 Television licences were in force compared with 745 and 93 respectively a year earlier. At the same date 60 per cent of all United Kingdom licence holders were members of the R.S.G.B., a similar figure to that recorded last year.

There has been a satisfactory increase in all grades of home membership but the number of overseas licensed members has fallen by about 60. The Associate grade has again increased—this time by more than 200. The Council proposes to give consideration at an early date to the economics of the Associate grade—the current annual subscription of 15/- appears to be too low, bearing in mind the high cost of producing the Society's Journal and of providing other facilities.

Affiliated Societies

At June 30, 1960, the number of societies affiliated to the R.S.G.B. was 144 compared with 142 a year earlier.

R.S.G.B. Bulletin

The dispute in the printing industry (commented upon in the Report for the year to June 30, 1959) was not settled until August 1959, by which time considerable leeway had to be made up by both printers and publishers. The July issue contained only 32 pages and was not published until the end of August. The August issue ran to 48 pages but appeared a month late. In order to make up for the smaller issues of midsummer the September issue comprised 64 pages but it was not until the end of the calendar year that the publication schedule returned to normal.

Following the settlement of the dispute the Society, in common with other publishers, was notified in August 1959, that printing charges for the R.S.G.B. BULLETIN would be increased immediately by approximately 10 per cent. It was estimated in the Supplementary Report that the effect of this increase would mean that on the basis of twelve 48-page issues, printing charges would rise by approximately £720 in a full year. The Report of the Honorary Treasurer confirms the information reported to the membership nearly a year ago.

In order to offset, in some measure, the effect of this serious increase in production costs the Council gave notice that advertising rates would be increased as from July 1, 1960.

The number of pages in Volume 35 of the Society's Journal was 576 compared with 592 pages in Volume 34. The falling-off was due entirely to the dispute in the printing industry.

The technical standard of the R.S.G.B. BULLETIN remained consistently high throughout the year, in fact many members expressed the opinion that the standard had improved considerably. The Bevan Swift Memorial Prize for the most meritorious contribution to Volume 35 of the R.S.G.B. BULLETIN was awarded to Mr. G. R. B. Thornley (G2DAF) for his article "The G2DAF S.S.B. Transmitter" and the Norman Keith Adams Prize for the most original contribution to Mr. John Gazeley (B.R.S.20533) for his description of "A Three Valve Receiver for Two Meters."

The Ostermeyer Trophy was awarded to Mr. G. B. Horsfall (G3GKG), for his description of "A Single Sideband Receiver for the Amateur" which was considered to be the best piece of home-constructed apparatus described in Volume 35 of the R.S.G.B. BULLETIN.

The Varney Trophy was awarded to Mr. David Deacon (G3BCM) for his article "High and Low Pass Filters for All." The Reverend Paul Sollom (G3BGL), was awarded the Wortley Talbot Trophy for his article "Real DX on 10 metres."

Monthly commentaries were contributed by Mr. F. G. Lambeth (G2AIW) "Four Metres and Down" and by Mr. J. D. Kay (G3AAE) and from May 1960, by Mr. R. F.

Stevens (G2BVN) "The Month on the Air." Mr. J. P. Hawker (G3VA) again contributed at intervals the popular "Technical Topics" feature, whilst Mr. G. R. B. Thornley, (G2DAF) began a series of technical commentaries on Single Sideband Operation.

The Council records its thanks to all who contributed articles and other material to Volume 35 of the Society's Journal.

Geneva Radio Conference

As reported upon in the Supplementary Report, Mr. L. E. Newnham, B.Sc. (G6NZ, Past President), represented the Society during the first three weeks of the Administrative Radio Conference in Geneva and again for 10 days during October and November 1959. Mr. Newnham was attached to the United Kingdom delegation as a technical adviser on Amateur Radio matters.

The General Secretary (Mr. John Clarricoats, O.B.E., G6CL) also attended the Conference for three separate periods, totalling about eight weeks, in his capacity as leader of the International Amateur Radio Union team of observers. Mr. Arthur Milne (G2MI, Past President) joined the team for two weeks in October and Mr. J. D. Kay (G3AAE) was in Geneva for one week in November.

The Conference commenced on August 17, 1959, and ended on December 21, 1959. A comprehensive report on the decisions of the Conference, in so far as they affect the Amateur Service, appeared in the January 1960 issue of the R.S.G.B. BULLETIN.

In Region I (Europe, Africa and parts of Asia) *status quo* was maintained on all bands except 7 Mc/s (where 50 kc/s between 7100 and 7150 kc/s was lost to broadcasting) and 420 Mc/s. In Region I the latter band is to be restricted to a width of 10 Mc/s (420–430 Mc/s) but in the United Kingdom a bandwidth of 30 Mc/s between 420 and 450 Mc/s will be allocated to the Amateur Service on a non-interference basis with other Services.

As the result of efforts made by the R.S.G.B. and I.A.R.U. observers to the Conference a number of Region I administrations, additional to those referred to in the Atlantic City Radio Regulations, agreed to allocate up to 200 kc/s, between 1715 and 2000 kc/s, to the Amateur Service.

The Council wishes to place on record its thanks to the General Post Office for inviting the Society to appoint a representative to serve on the United Kingdom Government delegation.

The Council is glad to record that members of the United Kingdom Government delegation, as well as members of many other delegations, spoke at the Conference in high praise of the Amateur Service and of the work done by radio amateurs, particularly in times of emergency.

Frequency Advisory Committee

The Society has again been represented on the Postmaster General's Frequency Advisory Committee by the General Secretary.

The Council is pleased to report that Dr. R. L. Smith-Rose, C.B.E. (Immediate Past President), has recently been appointed by the Postmaster General to succeed Sir Laurence Bragg, M.C., F.R.S. as Chairman of this very important Committee.

I.A.R.U. Region I Conference

A highly successful International Amateur Radio Union (Region I) Conference was held in Folkstone during June 1960, when delegates from 17 countries were in attendance. A comprehensive report on the work done at the Conference appeared in the July and August 1960 issues of the Society's Journal.

The R.S.G.B. acted as hosts at the Conference, which was organized by the General Secretary in his capacity as Secretary of the I.A.R.U. Region I Executive Committee.

Intruder Watch

During the period of the Geneva Radio Conference the Society, through the good offices of the Honorary Organizer of the Intruder Watch (Major Dennis Haylock, G3ADZ), published a comprehensive report showing the gravity of the position brought about by the continued operation of commercial and service stations in exclusive amateur bands. Copies of the report were sent to all I.A.R.U. Member-Societies in Region I.

The Council wishes to record its thanks to Major Haylock and his colleagues for their services to international Amateur Radio. Although the menace of the intruder is still serious the Council is aware that as the result of protests by the United Kingdom to offending administrations a number of intruders have moved out of exclusive amateur bands.

Licence Matters

During the year, as an outcome of discussions between the Society and the G.P.O., a number of interesting new licence concessions were authorized. For example, amateurs may now, upon application, use Radio Teleprinting (RTTY) on all bands except 160 metres and Facsimile on 420 Mc/s and higher frequencies, whilst the band 70·2 to 70·4 Mc/s is now available to all U.K. amateurs except those in the far north of Scotland where operation is restricted to a band 0·1 Mc/s wide. The G.P.O. also agreed during the year to permit the use of high power (up to 1 kW) on 2 metres at certain stations engaged on work in connection with the International Geophysical Co-operation programme.

Society Publications

During the year new editions of the *R.S.G.B. Amateur Radio Call Book* and *A Guide to Amateur Radio* were published. The former was edited by the General Secretary and Miss Gadsden as a spare time task, and the latter by Mr. J. P. Hawker (G3VA). Sales of both publications have been very satisfactory.

Work was begun during the year on two new R.S.G.B. publications, namely, The *Radio Amateur's Examination Manual* and *Service Valve Equivalents*. Mr. B. W. F. Mainprise, B.Sc.(Eng.) (G5MP) and Mr. G. C. Fox (G3AEX) were responsible, respectively, for producing the manuscripts. The first named publication is expected to appear early in 1961 and the latter during November 1960.

R.S.G.B. News Bulletin Service

To meet the wishes of members who live some distance from London the Council decided to extend the R.S.G.B. News Bulletin Service by inviting members in the Cheltenham, Derby and Glasgow areas to join the team of news readers. It is believed that the extended service has been much appreciated by members generally.

The Council wishes to place on record its very warm thanks to those who have acted as news readers and in particular to their colleague, Mr. Arthur Milne (G2MI) who has read the London News Bulletin with very few breaks every Sunday morning since the service began five years ago.

Slow Morse Transmissions

The Council also wishes to record its thanks to those members who, week in, week out, voluntarily transmitted Slow Morse exercises for the benefit of persons anxious to obtain a transmitting licence.

The Radio Amateurs' Examination

Two examinations were conducted during the year, the first, in October 1959, by the G.P.O. resulted in success for

159 of the 210 candidates. In the May 1960 examination, conducted by the City and Guilds of London Institute, there were 699 successful candidates out of 1,274 who sat.

The R.S.G.B. was again represented on the City and Guilds Advisory and Moderating Committees for the Radio Amateurs' Examination by Mr. W. A. Scarr, M.A. (G2WS) and the General Secretary. Mr. H. A. M. Clark, B.Sc.(Eng.), (G6OT) served again as a member of the Advisory Committee.

Unlicensed Operation

During the year the G.P.O. reported to the Society that a number of persons had been successfully prosecuted for operating or establishing a station without a licence. In several cases members had been responsible for helping the G.P.O. to track down the operators of unlicensed stations.

Official Regional Meetings

O.R.M.s were held in Glasgow (September 12, 1959), Prestwick (September 13, 1959), Southampton (September 20, 1959), Cardiff (September 26, 1959), Aberdeen (May 21/22, 1960) and Redcar (June 26, 1960). Attendances at the meetings varied a good deal but, on the whole, support was at least comparable with that reported at previous meetings in the same part of the Region.

Scheme of Representation

The Council records its thanks to all Society Representatives and especially to those who were responsible for organizing O.R.M.s and other special events in their Region, County or Town.

Mobile Rallies

Mobile rallies were held at many centres during the year including Woburn Abbey, Longleat House, Trentham Gardens and Harewood House. Very large attendances were recorded at many of the rallies.

Lecture Programme

Because attendances over past years had been gradually falling off the Council decided to offer a more restricted programme of lectures for the session 1959/60.

The following lectures were delivered at meetings of the Society held at the Institution of Electrical Engineers:

October 16, 1959	" Practical Applications of Transistors for the Radio Amateur." By Mr. T. D. Towers, M.B.E. (about 100 present).
January 20, 1960	" Radio Aspects of the I.G.Y." By Dr. R. L. Smith-Rose, C.B.E. Followed by: " Amateur Radio Participation in the I.G.Y." By Mr. G. M. C. Stone, G3FZL. (about 40 present).
March 25, 1960	" High Fidelity Reproduction for the Radio Amateur." By Mr. H. A. M. Clark, B.Sc.(Eng.), M.I.E.E. (G6OT). (about 120 present).

Films and Tapes

The Council records its thanks to those members who have acted as Honorary Curators of the Society's library of films and tape recorded lectures. Mr. C. W. Austin (B.R.S.22019) continued his work in connection with the film library, while Mr. F. H. Lawrence (G2LW) undertook similar much appreciated work in connection with the tape recorded lectures.

QSL Bureau

The R.S.G.B. QSL Bureau, under the direction of Mr. Arthur Milne (G2MI) again handled a very large number of cards. The Council records its thanks to all who helped to maintain the QSL Bureau at a high degree of efficiency. The work of the QSL Sub-Managers was especially appreciated.

Certificates and Awards

Mr. George Verrill (G3IEC) in addition to his duties as a QSL Sub-Manager, continued to perform yeoman service as Honorary Certificates Manager. During the year Mr. Verrill handled a great many claims from members and non-members alike. His work on behalf of the Society is greatly appreciated by the Council.

Mullard Award

To the great disappointment of those who had been concerned in negotiating the terms and conditions governing the Mullard Award, no claims in respect to the year 1959 were received.

Exhibition Committee

The Committee, under the chairmanship of Mr. C. H. L. Edwards, A.M.I.E.E. (G8TL), were again responsible for organizing the Society's stand at the 1959 Radio Show, Earls Court, London, and at the Third Annual R.S.G.B. Radio Hobbies Exhibition held in the Old Hall of the Royal Horticultural Society, London, during November 1959. The latter exhibition (organized by Mr. P. A. Thorogood, G4KD), was opened by Rear-Admiral K. R. Buckley, Director of Engineering and Electrical Training, Admiralty, in the presence of many distinguished guests. An attendance of nearly 10,000 was recorded during the four days it was open.

R.A.E.N. Committee

Members of the Radio Amateur Emergency Network took part in numerous exercises during the year with local groups of the British Red Cross Society and St. John Ambulance Brigade. The Network is now exceptionally well organized and is capable of undertaking emergency duties at short notice if the necessity should arise.

The thanks of the Council are recorded to Dr. Arthur Gee (G2UK) who was the Chairman of the R.A.E.N. Committee throughout the year, and to his colleagues on the Committee. Excellent work was again done by the Hon. Secretary, Mr. E. Arnold Matthews (G3FZW.).

TVI/BCI Committee

The TVI/BCI Committee under the chairmanship of Mr. David Deacon (G3BCM) continued to give advice and technical assistance to members who had encountered difficulties in regard to television and/or broadcast interference.

A statement setting out the current practices of the Post Office on various points concerning policy and the interpretation of rules and regulations, etc., was published in the August 1959 issue of the R.S.G.B. BULLETIN.

The Council records its thanks to the members of the Committee for their many valuable contributions to the Society. An article entitled " Low and High Pass Filters for All " prepared by the Chairman and sponsored by the Committee appeared in the March 1960 issue of the R.S.G.B. BULLETIN. The article represented a valuable contribution to the TVI problem.

Technical Committee

The Technical Committee under the chairmanship of Mr. H. A. M. Clark, B.Sc.(Eng.), M.I.E.E. (G6OT) gave consideration to a number of matters of technical interest including the narrow band image system of Amateur Television transmission, Facsimile transmission and

Radio Teleprinting. Members of the Committee were responsible for the preparation of technical papers for presentation to the Folkstone I.A.R.U. Region I Conference.

The Technical Development Sub-Committee (Chairman, Mr. G. M. C. Stone, G3FZL) met frequently during the year to prepare a programme of work leading to the publication of articles based on modern techniques.

The Council records its thanks to the members of the Technical Committee and the Technical Development Sub-Committee for the important work undertaken during the year.

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 very wide range of contests and other competitive events. The Chairman of the Committee was Mr. D. A. Findlay, D.F.C. (G3BZG), up to the end of 1959, and Mr. R. C. Hills, B.Sc.(Eng.) (G3HRH) from January 1960.

The main events, namely, National Field Day, the B.E.R.U. Contest and the R.S.G.B. Telephony Contest were all well supported and in each case competition was keen. The 1960 N.F.D. event was won by Stamford and District R.S.G.B. group with a score of 2,239 points. The High Power section of the 1960 B.E.R.U. Contest was won by Mr. G. F. Barrett (ZC4IP) and the Low Power section by Mr. F. C. van Wyk (ZC6R.). Mr. E. H. Sherlock (B.R.S.6604) won the Receiving Section.

The R.S.G.B. Telephony Contest was won by Mr. D. L. Courtier-Dutton (G3FPQ) with a score of 5,305 points, exactly 1,000 points more than the number scored by Mr. N. I. Bower (G5HZ) his nearest rival. The Receiving Section of the Contest was won by Mr. R. Poppi, (B.R.S.20570) who scored 2,995 points, 25 more than the runner-up, Mr. W. J. C. Pinnell (B.R.S.21624.)

V.H.F. Committee

The V.H.F. Committee under the chairmanship of Mr. W. H. Allen, M.B.E. (G2UJ) (up to December 1959) and of Mr. R. C. Hills, B.Sc.(Eng.), G3HRH (from January 1960) has been concerned chiefly with the task of organizing the two metre beacon station which is to operate from the B.B.C. mast at Wrotham, Kent. The Committee has also given consideration to a number of matters connected with v.h.f. contests, both national and international. Successful V.H.F. Conventions were held in Paisley (March 12, 1960) and London (May 21, 1960). The latter was organized in association with the London U.H.F. Group.

The Council records its thanks to the members of the V.H.F. Committee who have continued to correlate the activities of members interested in v.h.f., u.h.f and s.h.f. bands.

Scientific Studies Committee

During the year under review the Council set up a Scientific Studies Committee. The Committee is currently studying the I.G.Y. tropospheric and auroral propagation analysis programmes and has in hand future tropospheric, auroral and other programmes of a similar type. The Chairman of the Committee is Mr. G. M. C. Stone (G3FZL) who with his colleagues is thanked for the many valuable contributions they have made to the Society's Journal and to science generally.

Historic Equipment

The Council was pleased to receive from a Vice-President of the Society, Mr. Maurice Child, the gift of a number of items of historic wireless equipment. The equipment is being stored in the home of a Council member until such time as the Society is in a position to accept it for display.

London Members' Luncheon Club

The Council is pleased to learn that support for the London Members' Luncheon Club continues to grow. Attendances in excess of 50 have been reported during the year with nearly 100 present at the Christmas luncheon, including the President and several members of the Council. The important contribution made by the Club under the leadership of Messrs. S. E. Vanstone, G2AYC (Chairman), F. W. Fletcher, G2FUX (Hon. Secretary) and D. C. Jardine, G5DJ (Hon. Treasurer) is warmly appreciated.

Council and Committee Meeting Attendances

Name	Council Meeting Attendances		Committee and Sub-Committee Meeting Attendances	
	Actual	Possible	Actual	Possible
Bartlett, H. A. ..	7	12	2	6
Caws, N.	11	12	5	5
Deacon, D.§ ..	4	5	15	21
Edwards, C. H. L.	12	12	16	17
Ellis, K. E. S. ..	10	12	3	10
Findlay, D. A.† ..	6	6	8	14
Green, W. J.* ..	3	3	—	—
Hills, R. C.‡ ..	6	6	9	15
Hum, J. H.† ..	5	6	4	4
Ingram, E. G. ..	12	12	3	3
Kay, J. D.	12	12	—	1
Metcalfe, W. R. ..	4	12	—	—
Milne, A. O. ..	12	12	—	—
Mitchell, H. W.† ..	—	6	—	—
Newnham, L. E. ..	12	12	12	15
Parker, F. K.‡ ..	6	6	—	1
Russell, F. A.‡ ..	6	6	1	1
Scarr, W. A.† ..	5	6	—	3
Smith-Rose, R. L...	5	12	—	—
Stone, G. M. C.‡ ..	5	6	27	30
Wade, P. H. ..	10	12	1	3
Williams, A. C. ..	11	12	1	1
Yeomanson, E. W.	12	12	19	20

* Retired from the Council October 1, 1959.
† Retired from the Council December 31, 1959.
‡ Elected to the Council January 1, 1960.
§ Co-opted to the Council February 1960.

Radio Amateur Old Timers' Association

The Second Reunion of the Radio Amateur Old Timers' Association took place in London on April 1, 1960, when the late Air-Marshal Sir Raymund Hart, K.B.E., was the guest of honour. The Association has nearly 100 members all of whom have held a licence issued by the G.P.O. for at least 25 years. Nine Past Presidents of the R.S.G.B. are members of the Association.

Silent Keys

The Council records with deep regret the passing of a number of members including W. H. Marston (G2PD); F. M. Smith (G2ATL); Charles Leftwich (G3GSE); G. T. Smith-Clarke (G4RK); W. Titherington (G5MU); Mark Hollingshead (G5QG); Harold Kenworthy (G6HX); W. Gill (G6NP); Leslie Parry (ex-G6PY); Steve Butters (G6UB); Joe Burnley (GI3AXD); Hugh McConnell (GM2ACQ); James Lamb (GM4TL); Tom Laing (GM6LG); Archie Evans (GW4MZ).

"Transistors and All That"

THE Faraday Lecture for 1960-61 is to be given at I.E.E. centres throughout the U.K. by Mr. L. J. Davies, C.B.E., M.A., B.Sc., M.I.E.E. Mr. Davies' subject will be "Transistors and All That."

The centres to be visited are Rugby (November 16), Bristol (December 8), Swansea (December 13), Manchester (January 24, 1961), Leeds (January 26), Portsmouth (February 14), London (February 16), Birmingham (February 28), Leicester (March 2), Edinburgh (March 21) and Newcastle (March 23).

Further details may be obtained from the Secretary, Institution of Electrical Engineers, Savoy Place, London, W.C.2.

Society News

Mr. Horace Freeman Elected an Honorary Vice-President

IN recognition of his distinguished services to the Society as Advertisement Manager of R.S.G.B. publications since 1925, the Council has elected Mr. Horace Freeman an Honorary Vice-President of the Society. Mr. Freeman recently retired from active business life.

Mr. Freeman's association with radio dates back to 1922 when he put forward the idea for the First All-British Wireless Exhibition and Convention. The Exhibition, of which

Mr. Horace Freeman who has been elected an Honorary Vice-President of the Society.

Mr. Freeman was manager, was held at the Royal Horticultural Society's Hall, Westminster, London, from September 30 to October 7, 1922, under the auspices of the Wireless Society of London (now the R.S.G.B.) and all its affiliated societies. This exhibition was followed in March 1923 by a similar show in Manchester, of which Mr. Freeman was also manager.

In 1924 Mr. Freeman became Advertisement Manager for the Radio Press Ltd. and late the following year established his own agency (Parrs Advertising Ltd.) which specialized in radio, electrical and mechanical engineering publicity. Parrs Advertising was merged with the National Publicity Co. Ltd. in 1951.

Mr. Freeman was manager of the first seven R.S.G.B. Amateur Radio Exhibitions, the forerunner of the present R.S.G.B. International Radio Hobbies Exhibition.

Mr. Freeman has not always been an advertising man. At the age of 14 he went to sea as an apprentice on a sailing ship, visiting South America, South Africa, Mauritius and the U.S.A. When life at sea began to pall, the young Horace left the ship at Sabine Pass, Texas, where he held a variety of jobs including control of an open air swimming pool. After a visit home to England, Mr. Freeman went to Dallas, Texas, where he was employed at the head office of the Texas and Pacific Railway Co. Eventually, he worked his passage back to England. He now lives in retirement at Effingham, Surrey.

Mr. J. Douglas Kay (G3AAE)

COUNCIL Member J. Douglas Kay (G3AAE), is now living at 75 Roundmead Avenue, Loughton, Essex. (Telephone: Loughton 3669).

London Lecture Meeting

MORE than 60 members attended the meeting at the Institution of Electrical Engineers, London, on October 21, 1960, when Mr. R. H. Hammans (G2IG) lectured on "Single Sideband Techniques" and demonstrated his new six band triple conversion transistorized miniature communications receiver.

The chair was taken by the Penultimate Past President, Mr. L. E. Newnham (G6NZ), and a vote of thanks to the lecturer was proposed by Mr. R. F. G. Thurlow (G3WW).

Unlicensed Operation

AT Wanford Court, Exeter, on October 13, 1960, Graham Trevor Parsons of Teign House Bungalow, Christow, Exeter, pleaded guilty to using radio apparatus without a licence contrary to Section 1 (1) of the Wireless Telegraphy Act 1949. He was fined £40, ordered to pay £10 10s. costs and to forfeit the apparatus. It is understood that the prosecution related to the use of the call-sign G3MVJ by a person calling himself "Jack of Brighton."

At Cannock Magistrate's Court on September 12, 1960, Dennis William Walker of Huntington Terrace Road, Chadsmoor, and Brian George Gallear of Westminster Road, Hednesford, each pleaded guilty to using radio transmitting apparatus without a licence. They were each fined £5, ordered to pay £3 3s. costs and to forfeit their apparatus. At the same Court on September 19, 1960, Dennis Phillips of Rudley Road, Hazelslade, Cannock, pleaded guilty to a similar charge and was fined £5, ordered to pay £3 3s. costs and to forfeit his apparatus.

At Sheffield City Court on September 26, 1960, John Hempsall Best, Priory Place, Sheffield, pleaded guilty to a charge of using wireless telegraphy apparatus without a licence. He was fined £10 and ordered to pay £5 5s. costs.

R.S.G.B. International Radio Hobbies Exhibition 1960

ALL equipment for display in the Home Constructors' Section which is not being delivered to the Exhibition personally by members, clubs or groups, should be sent to C. Waterman (G3NKX), 46 Danbury Road, Loughton, Essex.

R.S.G.B. QSL Bureau

THE holders of the call-signs VQ2HJ and VS9AP who are believed to be back in the U.K., are asked to let the R.S.G.B. QSL Bureau have their present addresses.

R.S.G.B. News Bulletin Service

WITH the agreement of the Post Office, the R.S.G.B. News Bulletin Service was extended on November 6, 1960, to include a new 80m transmission at 12 noon from the Aberdeen area. The full schedule of transmissions on 2m and 80m is set out elsewhere in this issue.

The operators in the Aberdeen area are Messrs. C. F. Sherrit (GM3EOJ) and A. G. Anderson (GM3BCL). Mr. G. D. Roe (G3NGS) has been added to the rota of v.h.f. operators in the London area.

Temporary Alternative Address Operation

IT was recently reported to the Society that the G.P.O. had taken action against a licensed radio amateur for temporarily installing and operating wireless telegraphy apparatus at an alternative address when the equipment was neither his own property nor that of another licensed amateur.

In order to ascertain whether this represented an official policy decision of concern to all licensees or a ruling made to meet a particular set of circumstances an official statement was sought from the G.P.O.

The following reply has been received from the Radio Services Department.

> "The terms of Clause 1 (1)(a)(ii) of the Amateur (Sound) Licence are designed to allow a licensed amateur to operate his own amateur station at a temporary alternative address or location. If he operates a station established at an address under the terms of another amateur's Amateur (Sound) Licence he can only operate that station under the terms of Clause 1 (2) (c) of the licence—that is, in the presence of, and under the direct supervision of the licensee. The licence does not authorize him to use a station installed at an address by an unlicensed person. We take a serious view of any such use; perhaps you would care to make this known to your members."

Reception of Unauthorized Radiocommunications Secrecy to be Observed

IT is desirable to remind all licensees of the fact that it is an offence under the Wireless Telegraphy Act, 1949, to receive wireless telegraph transmissions which are not specifically authorized by a licence issued by the Postmaster General.

The Amateur (Sound) Licence and its variations is an exclusive authority relating to the transmission and reception of amateur signals only. The Broadcast and Television Licence is an authority permitting the reception of public broadcast and television as well as amateur transmissions.

The Wireless Telegraphy Act, 1949, Part 1, Section 5, states *inter alia:*

(*b*) Any person who otherwise than under the authority of the Postmaster General or in the course of his duty as a servant of the Crown, either,

(*i*) uses any wireless telegraphy apparatus with intent to obtain information as to the contents, sender or addressee of any message (whether sent by means of wireless telegraphy or not) which neither the person using the apparatus nor any person on whose behalf he is acting is authorized by the Postmaster General to receive; or,

(*ii*) except in the course of legal proceedings or for the purpose of any report thereof, discloses any information as to the contents, sender or addressee of any such message, being information which would not have come to his knowledge but for the use of wireless telegraphy apparatus by him or another person,

shall be guilty of an offence under this Act.

(Note: In this Act, Wireless Telegraphy is the generic term for all modes of radio services using Hertzian waves.)

In addition, Article 21 of the I.T.U. Atlantic City Radio Regulations, 1947, ratified by the United Kingdom Administration, states:

Secrecy—The administrations bind themselves to take the necessary measures to prohibit and prevent:

(*a*) the unauthorized interception of radiocommunications not intended for the general use of the public;

(*b*) the divulgence of the contents, simple disclosure of the existence, publication or any use whatever, without authorization, of information of any nature whatever obtained by the interception of radiocommunications mentioned in (*a*) above.

(Note: The above becomes Article 17 of the I.T.U. Geneva Radio Regulations, 1959, which come into effect on May 1, 1961.)

Both the Act and the I.T.U. Radio Regulations are referred to in the Amateur Licence and the above extracts have been printed for information.

Clause 4 of the Broadcast and Television Licence as well as note (*j*) of the Amateur (Sound) Licence should be read and understood in connection with the above.

Finally, whilst the unintentional reception of unauthorized signals cannot be avoided when switching or tuning from one amateur band to another, this does not in any way absolve the individual from preserving the secrecy of radiocommunications or from conforming to the requirements of the Act and the International Radio Regulations.

Single Sideband Group Proposed

MEMBERS who are interested in s.s.b. are invited to contact Mr. P. A. Thorogood (G4KD), 35 Gibbs Green, Edgware, Middlesex, with a view to the formation of an R.S.G.B. S.S.B. Group.

G3O Top Band Net

RECENTLY-licensed operators in the Surrey area with call-signs in the G3O series are invited to take part in the G3O Net on 1·97 Mc/s on Sundays at 18.00 G.M.T. The net provides an excellent opportunity to meet other new licensees and to obtain signal reports from a wide area. More distant stations may make skeds with the net by writing to J. M. Nisbet (G3OGO), 57 Haling Park Road, South Croydon, Surrey.

Silent Keys

HARRY KEMP (G4OT)

Amateurs the world over will regret the passing of Mr. Harry Kemp (G4OT) of Malden, Essex, in his 75th year. Harry was granted his first experimental transmitting licence in 1908 under the call-sign KXH, having grown up with the knowledge that his father supplied and erected wireless masts and aerials for Marconi during the early years of the century. A genial, big-hearted man, Mr. Kemp was active on all frequencies, from Top Band to 70 cm until within a few days of his death. Our sympathy goes out to his widow and his son in their bereavement. B. E.

T. L. SMITH (G2FVL)

It is with deep regret that we record the death of Theodore Leslie Smith (G2FVL) of Oldham, Lancs. G2FVL's favourite band was 14 Mc/s where he will be greatly missed by his many friends.

Condolences are offered to his widow and family in their bereavement. G4GS.

J. WILSON (GM8JW)

We record with sorrow the sudden death on October 8, 1960, of John Wilson (GM8JW). First licensed in 1934, "Jack" was a widely known personality among Scottish amateurs. He was a founder member of the Wishaw District Amateur Radio Club and his shack had an ever open door for anyone interested in Amateur Radio.

During the Second World War Mr. Wilson was engaged in Government work.

To his widow and family we express our sympathy in their bereavement. GM3IWU.

D/F Receiver Required

IN connection with the Intruder Watch the Society is anxious to acquire, either by purchase or on long loan, a D/F receiver covering the 7, 14, 21 and 28 Mc/s bands. Any member who is in a position to help the Society in this connection should write to the General Secretary giving details of the offer.

South-West of England Regional Meeting

IN spite of floods and inclement weather, 80 members and friends assembled at the Royal Hotel, Weymouth, on Sunday, October 2, 1960, for the first Regional Meeting ever to be held in the town. All parts of the Region were represented and long distances were covered by members from other Regions who attended. A feature of the meeting was the unusually high proportion of old timers present, more than 20 pre-war calls being noticed.

Welcomed at the gathering were a strong Council contingent comprising Frank Russell (G3BHS), Zone D Representative, C. H. L. Edwards (G8TL), R. C. Hills (G3HRH), G. M. C. Stone (G3FZL), Eric Yeomanson (G3IIR), and John Clarricoats, O.B.E., G6CL (General Secretary).

A mobile talk-in service was provided by G3MT on 1·8 Mc/s and by G3AS/M on 144 Mc/s. During the morning, members paid a visit to the G.P.O. Radio Station at Dorchester where the aerial systems and the recently installed equipment were much envied. Some visitors were also able to visit G2LZ and his wife on their yacht *Rona* in Weymouth Harbour where they found an amateur station operating under unusual conditions.

After an informal lunch at the Royal Hotel, followed by the official photograph, the business meeting was held in the ballroom. The proceedings were opened by the Regional Representative, R. E. Griffin (G5UH), who welcomed the members and official delegates present. The Council Members and the General Secretary all dealt with various topics of amateur interest. The new v.h.f. certificates, the service offered to members by the R.S.G.B. TVI/BCI Committee and contests scoring (with particular reference to N.F.D. and v.h.f. contests) were among the many subjects discussed. The General Secretary spoke about the Geneva Radio Conference and the I.A.R.U. Region I Conference in Folkestone. He emphasized the need for amateurs in new and developing countries to form themselves into National Societies so that the Amateur Radio movement in their respec tive countries is adequately represented both nationally and internationally.

A keen discussion followed during which members received much valuable information from the Council representatives.

After tea there was a raffle, followed by a lecture by J. N. Walker (G5JU) on "Communication Receivers" with a demonstration of the Eddystone 888A receiver.

An interesting programme was also arranged for the ladies which included a visit in the morning and a talk in the afternoon.

The success of the meeting was largely due to the efforts of A. A. Barrett (G5UF), C.R. for Dorset, G. S. C. Udall (G2HCD), A. Robins (B.R.S.22741) and C. F. Broomfield (A.1687). Particular thanks are due to Mrs. Blanchard (wife of G3MT) for conducting the ladies' programme. Thanks are also due to C. C. Redshaw (G2YT) for arranging the Dorchester Radio Station visit and to J. N. Walker (G5JU) for the lecture and demonstration. R.E.G.

Affiliated Society Representatives, 1961

IN accordance with the announcement published on page 418 of the March 1957 issue of the R.S.G.B. BULLETIN, every society affiliated to the R.S.G.B. is invited to nominate one of its members to serve as an Affiliated Society Representative for the year 1961.

Societies who wish to take advantage of this arrangement are requested to forward a nomination paper, duly signed by five members of the society, who are themselves Corporate Members of the R.S.G.B., to the General Secretary so that it arrives not later than November 30, 1960. In the event of more than one person being nominated as the representative of a particular society a ballot will be conducted, details of which will be published in the December 1960 issue of the R.S.G.B. BULLETIN.

Nominees for the office of A.S.R. must be Corporate Members of the R.S.G.B. A.S.R.s will enjoy the same privileges and have the same status as T.R.s.

This picture was taken at the South-West of England Regional Meeting in Weymouth on October 2, 1960.

CONTEST NEWS

RESULTS — REPORTS — RULES

D/F National Final

THE R.S.G.B. 1960 D/F National Final took place on Sunday, September 4, in the Aldershot area and was jointly organized by F. A. Jefferies (G8PX) of the Oxford and District Amateur Radio Society and G. T. Peck (B.R.S.15402) of the High Wycombe Group on behalf of the Contests Committee. All the fifteen competitors who by qualification in previous events were eligible to take part assembled just north of the main A30 at Cricket Hill near Sandhurst in weather which was fine and sunny to start with but deteriorated sadly in the later stages.

Transmissions from the two concealed stations commenced at 13.30 and the first bearings soon showed that the start was in between the two transmitters, all three being in a straight line running north-west and south-east.

Only two competitors successfully located both stations before the close of transmissions. First to finish was P. M. Williams of the Slade Radio Society at 15.43 G.M.T. with only seventeen minutes in hand, followed by M. P. Hawkins of the Oxford and District Amateur Radio Society at 16.00 within seconds of final close down. D. Alexander, also of the Oxford Society, continuing after transmissions had ceased, found his second station at 16.21 and was the only other competitor to complete the contest.

Station " A " was situated some 4½ miles from the start in the hedge of a lane near a flooded ford and was so near the water's edge that many competitors spent much of their valuable time traversing the very devious route from one side of the ford to the other. Seven competitors located this station but most had little time left in which to locate Station " B ", 7½ miles from the start in exactly the opposite direction. This transmitter was hidden in a tent on Pirbright Common and was only accessible from the remote side as much of the common was actively in use as a small arms range. Two other competitors found this station at the end of the contest leaving no time at all to search for their second transmitter.

The winning team led by Mr. P. M. Williams of Slade Radio Society with the organizers of the D/F National Final and the operators of the hidden transmitters.

(Photo by G2AHL)

Tea was later served to a gathering of nearly 60 at Rose Cottage Tea Gardens near Bracknell, but by this time torrential rain had set in causing the hasty evacuation of the tables laid out in the garden, and in consequence the indoor accommodation became somewhat crowded. Messrs. D. A. Findlay, D.F.C. (G3BZG) and A. W. W. Timme (G3CWW) of the Contests Committee acted as Official Umpires with John A. Rouse, G2AHL (Secretary, Contests Committee) as an observer. After the announcement of the provisional results thanks were expressed to the organizers for providing a difficult but enjoyable and well arranged contest and to G8PX and G3FAS for operating their respective transmitters under somewhat trying conditions.

70 Mc/s Contest 1960

AT least 18 stations are known to have taken part in the 70 Mc/s Contest that took place on June 18-19, 1960 but only two sent in entries. P. K. Blair (G3LTF) with 879 points beat the B.B.C. Ariel Club station (G3AYC) which made 571. Although G3COJ (operator of G3AYC) worked 13 stations and G3LTF only 10, the latter was able to make three very good contacts—G3GCX at 180 miles, G5YV at 170 miles and G3EHY at 154 miles. G3AYC worked G3EHY at 120 miles and G3GZM at 119 miles, but a QSO with G5YV had to be abandoned. G3LTF used 50 watts to a QQV06-40 feeding an indoor three element Yagi while the receiver had an A.1714 cascode r.f. stage. G3AYC ran 50 watts to an 829B feeding a dipole. The receiver used an E88CC r.f. amplifier.

A very comprehensive check log of activity over the two days was received from G3KWH using an R.F.26 and a two and a half wave horizontal monopole (half his 7 Mc/s dipole). Without G3KWH's help it would have been quite impossible to check the entries.

There is known to be far more interest in 70 Mc/s than is indicated by the pitifully small entry and it lies very much with those who use the band regularly to whip up some activity at contest time. Judging from some of the serial numbers received by the two entrants some others must have run up quite respectable scores. Too many people feel that they lose face if they do not come in the top few in a contest table; they might take a leaf from the book of some outlying stations on 144 Mc/s for sheer dogged determination to enter whatever the score.

Second 144 Mc/s Field Day 1960

SOME 56 portable and 17 mobile stations are known to have taken part in the Second 144 Mc/s Field Day on July 3 while more than 100 fixed stations were on " to give the boys some points." Conditions were variable and never very good though some stations managed contacts into Europe from south-east England.

The winner of the Portable Section, for the second time this year, was P. Pollard (G3DIV/P) with 11,816 points. N. Hales (G2DTO/P) was runner-up with 10,352 points and S. F. Brown (GW4LU/M) led the Mobile Section with 5,239 points.

The longest distance contact reported was between G3DIV/P and DJ1DC at 310 miles and the most profitable was by the same station with DJ1UP/P at 285 miles for 570 points. G2DTO/P worked ON4ZN/P at 205 miles for 410 points. Between them these two stations accounted for eight Fs, five ONs and two DJs. One or two other south-easterly

stations also worked into France and Belgium but no PAs were logged.

The standard of log keeping was not good and some entrants had to be heavily penalized for not copying the location or report correctly: in one or two cases the QTH must have just been guessed! The new rule on specifying the location helped to reveal these people but unfortunately only a few entrants read the rules this time. (In fact one entrant went so far as to suggest a new rule very similar to that included!) Next year the rules on QTH and cover sheets will have to be strictly enforced so it will pay to read the rules carefully.

Results—Second 144 Mc/s Field Day 1960

Posn.	Call-sign	Contacts	Points	No. of Operators
1	G3DIV/P	73	11816	1
2	G2DTO/P	77	10352	1
3	G8SB/P	90	10173	1
4	G3ERD/P	96	9936	6
5	G3KMT/P	91	9393	1
6	G2HIF/P	90	8797	1
7	G3MAR/P	96	8492	1
8	G3EKX/P	72	7453	3
9	G3BOC/P	54	7433	1
10	G3JWQ/P	46	7160	1
11	G3LTF/P	56	7106	1
12	G3LAR/P	66	7014	2
13	G3NNG/P	74	6799	1
14	G3MDH/P	57	5996	1
15	G3FKO/P	62	5507	2
16	G3GKH/P	55	5445	3
17	G3FD/P	60	5344	1
18	G3JZW/P	61	4998	1
19	G3LCH/P	63	4914	2
20	G3AZT/P	58	4777	1
21	G3KCB/P	50	4597	4
22	G3HWS/P	51	4260	1
23	G3JPB/P	56	4196	1
24	G4JJ/P	39	4016	1
25	G3MII/P	58	4010	1
26	G3MA/P	36	3579	1
27	GW3KYT/P	45	3617	1
28	G4AU/P	57	2671	1
29	G2DSP/P	37	2463	1
30	G8LM/P	40	2256	3
31	G3DBO/P	48	2164	2
32	G2DHV/P	35	1825	1
33	GM3KYI/P	9	1230	1
34	GW3CBY/P	8	1015	1
35	G3JDM/P	18	985	1
36	GM3LAV/P	10	869	1
	Mobile Section			
1	GW4LU/M	50	5239	1
2	G3GTN/M	62	5140	1
3	G3FEX/M	47	4689	1
4	G3AS/M	27	1470	1

Equipment

Familiar valves were employed in the transmitters and the following is a breakdown of types used in the p.a.: four EF95; two QV04-7; one QQV02-6; five QQV03-10; sixteen 832; seven QQV03-20, T20, etc.; three QQV06-40 and one 829B. Some of the larger valves must have been very uneconomic at 25 watts input.

Receivers were more variable; indeed it appeared that in many cases the home station receiver had been taken out lock, stock and barrel! Three receivers were completely home-built. Valves used in the first r.f. stages included one 6AK5; one 6BQ7; one 6BZ7; three 12AT7; two ECC84; two ECC88; one 417A and two A2521. Tunable i.f.s used were one G209R; three HROs; nine Command receivers (various types); one BC342; one BC348; six S640; one R1475; one R1132 and one AR77.

Yagi aerials are well established and only three stations used stacks; two used 16 element arrays and one a 4-over-4 over-4. The Yagis had from 3 to 11 elements with the 4 or 5 element type most popular. Many 6-over-6 and 4-over-4 slot fed beams were used.

The mobile stations used aerials comparable with the portables: 3, 5 and 7 element Yagis, usually with a halo for good measure. All remained stationary throughout the contest.

No listener reports were received but the following stations are thanked for their check logs: G3LLJ/M, G3NNK and G5ZT.

European Fox Hunt Championships 1961

MEMBERS interested in taking part in an unofficial European Fox Hunt Championship, organized by the Swedish national society, S.S.A., to be held in Stockholm in early August, 1961, may obtain full details from Carl Erik Tottie (SM5AZO), Vice-President, S.S.A., Mölnavägen 1, Lidingö, 2, Sweden.

International Radio Amateur Year Book

THE first edition of this new *Year Book*, dated 1960-61, contains a Contests Diary showing all the principal events until August 1961, summarized results of the more important contests held during 1959 and 1960, and frequency predictions for 12 months ahead. Particularly interesting features are the reviews of conditions on the h.f. bands by J. Douglas Kay (G3AAE) and on the v.h.f. bands by F. G. Lambeth (G2AIW). Dr. A. C. Gee (G2UK) contributes an informative article on the British Amateur Radio Teleprinting Group.

For award hunters there are lists of British counties, the states of the U.S.A. and DXCC countries.

The *Year Book* is edited by Paul Casling (G3MWZ) and published by Hutchinson's, Ilkeston, Derbyshire. Copies, price 3s. 6d. each (by post 4s.), are available from R.S.G.B. Headquarters, 28-30 Little Russell Street, London, W.C.1.

CONTESTS DIARY

1960

November 26-28 CQ World Wide DX Contest (C.W. Section)

December 3-4 - 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 176, October, 1960)

1961

January 29 - 144 Mc/s C.W. Contest
February 4-5 - Affiliated Societies' Contest
February 25-26 - First 1·8 Mc/s Contest
March 4-5 - 144 Mc/s Open Contest *
March 11-12 - B.E.R.U. Contests
April 8-9 - Low Power Contest
April 16 - D/F Qualifying Event
April 23 - 420 Mc/s Contest
April 30 - D/F Qualifying Event (London)
May 7 - First 144 Mc/s Field Day *
May 14 - D/F Qualifying Event (South Manchester)
May 28 - D/F Qualifying Event
June 3-4 - National Field Day
June 10-11 - 1250 Mc/s Tests
June 17-18 - 70 Mc/s Contest
June 25 - D/F Qualifying Event
July 2 - Second 144 Mc/s Field Day *
July 9 - D/F Qualifying Event
September 2-3 - I.A.R.U. Region 1 V.H.F. Contest
September 2-3 - National 144 and 420 Mc/s Contests *
September 10 - D/F National Final
September 17 - Low Power Field Day
October 8 - R.A.E.N. Rally
November 11-12 - Second 1·8 Mc/s Contest
December 2-3 - R.S.G.B. 21/28 Mc/s Telephony Contest
R.S.G.B. 21/28 Mc/s Telephony Receiving Contest

** To coincide with dates of I.A.R.U. Region 1 v.h.f. contests.*

The National Radio and Television Show 1960

A NUMBER of different impressions could be gained by a visit to the 1960 National Radio Show, the nature of these depending mainly upon the interests of the individual concerned.

The Advance of Transistors

For the average amateur the features probably attracting most notice would be the sweeping advances in transistorized radio receivers and the streamlining and construction of some of the television receivers. The former can now be obtained in models suitable for v.h.f. f.m. reception in addition to a.m. on the medium and long wavebands. The quality and sensitivity of the v.h.f. receivers combined with their small size makes them an attractive proposition where a portable radio is required. The larger type of receiver now has an output stage capable of delivering up to 1 watt at acceptable quality, in comparison to the much smaller output powers of the earlier types. Two Ekco export models, the ETR90 and ETR92, both employing eight transistors and covering shortwave bands, appear to be very suitable for general listening. On the Daystrom stand the new four-wave band seven transistor portable, model RSW-1, was on show. This covers 11-50m, 90-200m and the medium wave band, and features a printed circuit board and 42 in. telescopic aerial for the two shortwave ranges. Most portable receivers are fitted with sockets for use with a car radio aerial, whilst the new car portable radio by Ever Ready is claimed to be the first dual purpose receiver operating from either its own battery or from a 12 volt vehicle electrical system.

The Transistor Display stand explained how transistors work and how they are made, and showed examples of transistorized apparatus including equipment which automatically turns on a water supply when the soil in a greenhouse approaches a certain degree of dryness.

Television Receivers

It is obviously only a matter of time before semi-conductors take over many of the functions in television receivers and the way ahead was shown by Ferguson with the Transvista using 24 transistors and 15 crystal diodes, and a 7 in. screen. It weighs only 20 lb. The batteries last for four hours and can then be recharged from the mains. Philco featured the Codenta, a system of unit chassis based on colour identification of circuits and components which will undoubtedly be welcomed by the service engineer. About 88 per cent of all television receivers now available are fitted with a 17 in. tube, the average price in the United Kingdom being £65.

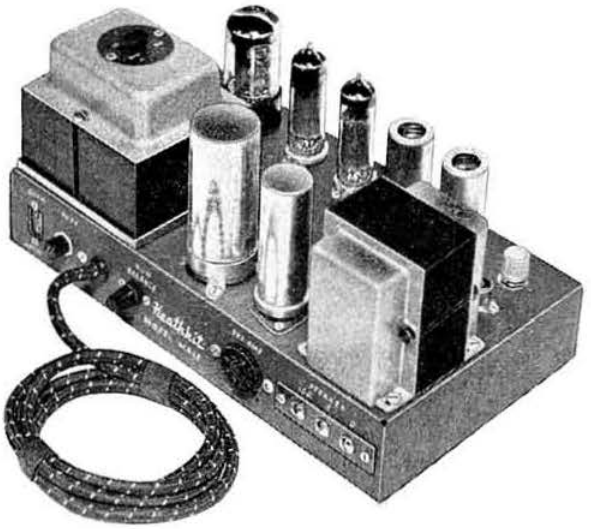
New Aerials

J-Beam Aerials Ltd., well known in amateur circles for their arrays for the 144 and 420 Mc/s bands, have produced a telescopic portable radio aerial which can be attached to a car or a receiver by p.v.c. suckers and which extends from 11 in. to 48 in. Designed for marine use is the new range of aerials covered in three-ply epoxy resin/glass laminate ensuring complete resistance to moisture. The Omnibeam, an indoor aerial for the primary area of co-sited stations, comprises a telescopic Band I dipole with a skeleton slot and reflectors for Band 3, the latter section giving 8db gain.

The Home Constructor Field

A new r.f. signal generator, model RF-1U, covering from 100 kc/s to 100 Mc/s on fundamentals and up to 200 Mc/s on calibrated harmonics was displayed on the Daystrom Heathkit stand. The kit includes a pre-aligned coil/band-switch assembly and provision for modulated or unmodulated r.f. output. Double screening is employed using copper-plated screens and chassis and a constant impedance attenuator is fitted. The two models of the grid dip meter, GD-1U and XGD-1 (transistorized) were also shown and kits for these are now available. Amongst the several Mullard stands was one catering for the home constructor where a large number of technical leaflets were available as well as the new *Reference Manual of Transistor Circuits*.

The R.S.G.B. stand displayed a variety of amateur equipment, including the complete installation for G3NAT, the R.A.E.N. station at British Red Cross Headquarters in London. More than 600 members signed the Visitors' Book during the period of the show. It was gratifying that the number of new members recruited was nearly three times as many as in 1959.



The Heathkit hi-fi monaural amplifier, model MA-12.

Police Radio

A stand not connected with commercial radio or television but nevertheless of considerable general interest was that of the Metropolitan Police, and in particular those sections dealing with the Emergency Telephone Service and the Interpol w/t link.

In all, there was something to satisfy the tastes of the majority of visitors even to the Roberts jewel-encrusted transistor set costing 2,000 guineas (plus 3s. 6d. for the battery).

—R.F.S.

National Radio Show 1961

THE National Radio and Television Exhibition is to be held at Earls Court, London, next year, from Wednesday, August 23, to Saturday, September 2, with a preview for overseas and other special visitors on Tuesday, August 22. It will mark the Silver Jubilee of television programmes which were first seen at "Radiolympia" in 1936. The Exhibition will be the 28th National Radio Show.

R.A.E.N. Notes and News

BY E. ARNOLD MATTHEWS (G3FZW)*

THIS month R.A.E.N. completes seven years' existence, and a short review of the state of the organization must surely bring some satisfaction to members. The nominal roll of officers now totals 107 and the area covered by groups has extended from the original east coast districts to a full coverage of 30 counties and parts of nearly another 30. In some 15 counties the standard of operation is admitted by Police to be at least equal to their own operators. Far from waning, the tide of activity has increased, and in some districts members must be devoting almost the whole of their free time to R.A.E.N.

The increasing demand for R.A.E.N. services has brought increasing responsibility. Conscious of this, many groups have set out to achieve higher standards and the resultant increase in work has inevitably weeded out those members who, for one reason or another, have been unable to find time to train. Any losses in membership are continually made good, since there is a steady flow of recruits amounting to about 300 per annum.

During the last year several blank spots in the national coverage have been filled in, and prospects for new groups are much better now than they were a few years ago because the probability of having help from neighbouring groups is so much greater.

Around the Groups

" One thing is absolutely certain, and that is that there is no lack of enthusiasm here " reports **Norfolk** C.C., G3HRK, in an interim report on Exercise " Bluebottle," held on October 9, when some 35 members operated from 13 police stations in the county, plus many more who were actively engaged at their home stations. The objects were to give a full-scale day and night test to the county link station scheme and to check the accuracy of communication. Messages were supplied by the police, and R.A.E.N. standard procedure was used. After dark c.w. was used extensively, and Insp. Dodds (G2AQO), who was keeping watch at Police H.Q., reported a considerable increase in speed and accuracy of message handling. The Police have classed the exercise as " successful " and the C.C. describes it as the most useful ever held in the county. A meeting is to be held shortly to analyse the mass of information gained.

G3FKO and G3CBU have discussed local problems with **Hants.** C.C., G3ION, and a new group is getting well under way in the **North Hants/Berkshire** area. A well attended meeting was held at Basingstoke Technical College on October 11, at which arrangements were made to obtain a bulk supply of crystals for the group frequency of 145·8 Mc/s. Although they did not participate in the Hampshire Group's exercise with St.J.A.B. on October 9, the Berkshire group gave prior assistance by obtaining flood situation reports from the scene at Fleet and passing these to the participants. A watch kept on the progress of the scheme gave some valuable instruction. The Group is anxious to enlarge its recruiting area and G3CBU and G3FKO will be pleased to hear from prospective members in the **Newbury** and **Maidenhead** areas.

Surrey Group held a practice in message handling under simulated call-out conditions on October 23, prior to holding a test call-out, and, later on, a surprise call-out. The exercise instructions contained a note-worthy reminder to drivers of mobiles to resist any tendency to react to the simulation of urgency but to drive carefully. The group resumed its fortnightly net schedules (20.00 G.M.T., 1930 kc/s) on October 24.

A recent exercise held by the **Bucks.** Group had several incidents, in which nearly 100 members of the Casualties' Union were employed as victims of an aeroplane crash, a railway accident and a drowning incident. Three 160m mobiles and a fixed station covered these incidents, and there were additional links on 160m and 2m to a Northampton hospital and St.J.A.B. H.Q. at Aylesbury.

Another group which uses 160m and 2m is **Essex**, and both bands were in use on October 16 when the group participated in a B.R.C.S. Forward Medical Units exercise at Clacton, Southend, Tilbury and Romford. R.A.E.N. was required to provide links from these H.Q.'s to Branch H.Q. at Chelmsford, and to hospitals at up to 15 miles from H.Q.'s by means of mobiles. Despite one breakdown of a power unit, the exercise went smoothly. In all 12 mobiles and eight fixed stations were manned, and including stand-by stations, listener stations and loggers about 40 members participated.

* *1 Shortbutts Lane, Lichfield, Staffs.*

R.S.G.B. INTERNATIONAL

RADIO HOBBIES EXHIBITION

Royal Horticultural Society's Old Hall,
Vincent Square, London, S.W.1

from
WEDNESDAY, NOVEMBER 23, 1960
to
SATURDAY, NOVEMBER 26, 1960
open from 11 a.m. to 9 p.m. daily

ADMISSION 2/-

THE EXHIBITION WILL BE OPENED AT 12.30 p.m., on WEDNESDAY, NOVEMBER 23, by

BRIAN RIX, G2DQU

Star of Stage, Screen, Television and Radio

The Exhibition will feature

Homebuilt equipment of every type
V.h.f./u.h.f. and Amateur Television displays
Army, Royal Navy and R.A.F. exhibits
New kits, new receivers
New transmitters, new test gear
Aerials and masts
Components, valves and transistors
Tape Recorders and hi-fi equipment
Radio books and magazines

See the seven fully-equipped Amateur Radio stations !

EXHIBITION STATION GB3RS

YOUR CHANCE TO WIN A

HALLICRAFTERS SX111 COMMUNICATIONS RECEIVER

See the entry card enclosed in this issue

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

Royal Horticultural Society's Old Hall, Vincent Square, London, S.W.1
Wednesday, November 23, 1960 to Saturday, November 26, 1960

LIST OF EXHIBITORS

Amateur Radio Mobile Society
Associated Electrical Industries (Woolwich) Ltd.
Associated Iliffe Press Ltd. (*Wireless World* and *Electronic Technology*)
Aveley Electric Ltd.
Avo Ltd.
Bridge Electronics
British Amateur Television Club
Data Publications Ltd. (*Radio Constructor*)
Daystrom Ltd. (Heathkit)
Electroniques (Felixstowe) Ltd.
Enthoven Solders
James Scott & Co. (Electronic Engineering) Ltd. (Hallicrafters)
Jason Motor & Electronic Co. Ltd.
Jennings Musical Industries Ltd.
K.W. Electronics Ltd.
London U.H.F. Group
Minimitter Co. Ltd.
Mullard Ltd.
Radio Society of Great Britain
Royal Air Force
Royal Naval Reserve
Short Wave Magazine Ltd.
65th Signal Regiment Royal Signals Territorial Army
Sound Vision Service (Electrical)
Taylor Electrical Instruments Ltd.
Tiger Radio Ltd.
Webbs Radio
Withers Electronics

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.

420 Mc/s Contests

DEAR SIR,—I would like to comment on the views expressed by Mr. Jeapes (G2XV) in *Four Metres and Down* in the October BULLETIN regarding the recent National 420 Mc/s Contest which was run concurrently with the National 144 Mc/s Contest and the European V.H.F. Contest.

For some years now Mr. Jeapes has made public the point of view which he expressed in October, but has failed to follow it up with any suggestions as to what could be done to rectify this apparently undesirable arrangement. I would like to try and offer my own analysis of the possible reasons behind his criticism.

It may be that Mr. Jeapes is anxious about the amount of activity on the 420 Mc/s band. I can assure him we all are but neither the holding of contests nor any other inducement will bring on to the band either those who do not wish to build gear to operate on 420 Mc/s or those who, having the gear, do not feel inclined to use it. If this point is in Mr. Jeapes' mind, let him devote his energies to persuasion of these individuals and not to destructive criticism of contests.

On the other hand, Mr. Jeapes may have the interests at heart of those whose arduous job it is to check contest entries and feels that they are unnecessarily burdening themselves. If this is so, I am sure that the National 420 Mc/s Contest could be dropped, thus relieving him of the necessity of making up his mind on which band he wishes to operate. But this would destroy a valuable opportunity for DX working on 420 Mc/s because the continental societies will continue to support the 420 Mc/s section of the European V.H.F. Contest with which runs concurrently the disputed National 420 Mc/s Contest.

In short, I personally do not see what Mr. Jeapes would prefer, and I would suggest that the only " fallacy " exists in the assumption that his views are generally held.

Yours faithfully,

Digswell, Herts. R. C. HILLS, B.Sc. (Eng.) (G3HRH).

Next Instalment Awaited with Breathless Excitement!

DEAR SIR,—A few words of appreciation and thanks to Mr. Thornley (G2DAF) for his most interesting and helpful articles on receiver design. I know of one American member in Tennessee who has suspended receiver construction to await the final spilling of the G2DAF receiver beans. Less thanks to the author for causing me to look for the BULLETIN as I used to await the next instalment of Dick Barton years ago! There's only one BULLETIN a month and that's just not enough for articles of this quality.

Yours faithfully,

Farnborough, Hants. M. J. FAULKNER (G3IZJ, ex-VP8AZ).

U.S. Phone Bands

DEAR SIR,—I have read with great interest the many letters that have been appearing in the BULLETIN recently concerning the expansion of the 14 Mc/s American phone sub-band. This situation is indeed unfortunate for virtually everyone concerned —except the " rag chewing set " which pushed this issue.

The expansion of the phone sub-band is almost universally resented by DX operators here, and I refer to all DX operators, not just s.s.b. operators. In my own case for example, I operate 14 Mc/s c.w. exclusively. This expansion of the phone segment has forced many s.s.b. stations into what was considered the a.m. phone segment of 14,100-14,200 kc/s. S.s.b. stations in this 14,100 to 14,200 kc/s segment have pushed more and more a.m. stations into the already over-taxed 14,000-14,100 kc/s c.w. segment. To quote W3KT, " the situation is a mess! " Perhaps the only remedies to this bad situation are for DX stations to have the W stations call off frequency, or have the F.C.C. rescind the order that gave the phone sub-band increase. At best, the former solution is none too good since it will not do much to break through the S9-plus " wall " of rag chewers and phone-patch QSOs, but it is much more likely to be successful than any attempt by anyone over here to have the F.C.C. rescind the order. With the gradual loss of 21 Mc/s due to declining sunspot activity, the situation is bound to get worse before it gets any better. The 3·5 and 7 Mc/s bands are rarely used for phone-patch QSOs in U.S.A. since they are not at all reliable for interference free communication. The 14 Mc/s band is the best band for handling such traffic, as high power as well as high gain aerial systems can be used without much difficulty.

I certainly would like to see G2BVN's suggestion " take hold," but I do not believe it will as no rag chewer wants to fight QRM in the crowded 14,200-14,300 kc/s segment when he can have a QRM-free QSO above 14,300 kc/s. This situation is certainly a miserable one, but all will have to make the best of it for the present.

Yours faithfully,

New York, U.S.A. WILLIAM R. SCHNEIDER, JR. (K2UYG).

Canadian Phone Bands Widened

DEAR SIR,—May I, as an ex-G and a VE for the last few years, comment on the action of the A.R.R.L. in petitioning the F.C.C. for an extension of the U.S. Phone Allocation to 14,350 kc/s?

I must admit to having been quite against the extension of the U.S. sub-band and took the matter up with the Canadian licensing authorities last year but I feel now that I misjudged the situation and that the action of the A.R.R.L., while it was intended to effect a change in the U.S. situation, as far as I am concerned, improved the situation of the Canadian amateur very considerably.

The anger and dismay shown by the average Canadian amateur to the F.C.C. action has resulted in the licensing authority in Canada amending the licence regulations for Canadian amateurs with the effect that:

(a) On 7 Mc/s the Canadian phone band, which was identical to the U.S. allocation, has now been extended by 50 kc/s and commences at 7,150 kc/s, a net gain of a phone interference-free 50 kc/s which is most useful for inter-Canadian working, with some possibilities of DX.

(b) The 14 Mc/s allocation which used to commence at 14,150 kc/s now commences in line with most other countries at 14,100 kc/s enabling Canadians to work over a 100 kc/s sub-band rather than a 50 kc/s band at either end of the old U.S. allocation. There is no gain in frequency spectrum but considerable gain in operating convenience.

(c) On 21 Mc/s, the old frequency allocation commenced at 21,200 kc/s allowing Canadians to operate in the 50 kc/s sub-band below the U.S. phone allocation. The new regulations have added 100 kc/s to this band; the phone allocation for Canadians now commencing at 21,100 kc/s, again a great increase in spectrum and operating convenience.

(d) On 28 Mc/s, the Canadian allocation commenced at 28,200 kc/s and this has been increased by a further 100 kc/s by commencing the phone allocation at 28,100 kc/s.

I, therefore, feel that the A.R.R.L. and the F.C.C. are to be congratulated in their action which, however left handed it appeared, has, in fact, increased the Canadian radio amateur's phone frequencies by 250 kc/s.

Yours faithfully,

Brantford, Ontario. W. J. RIDLEY (VE3EHR, G2AJF).

Crystal Erosion

DEAR SIR,—The July issue of the BULLETIN contained an article on the above subject by Jack Hum (G5UM). Though very helpful, it is thought to be a little too casual in its reference to the density of the ammonium bifluoride used and also to the eroding rate of crystals in kc/s per hour.

Two crystals, type FT243, but of different manufacture were successfully eroded from 7925 kc/s to 8064 kc/s and 8062 k/cs respectively. Fortunately the frequency shift in these cases was sufficient to allow some latitude due to different eroding rates; in fact the crystals were subject to three periods of eroding before the required frequency was reached. After each period the erosion rate, in kc/s per hour. was checked. The rate of erosion was, in fact, found to vary between both crystals and during each period.

Overall, the rate varied from 9 to 17 kc/s per hour with a 1 to 5 solution.

I am of the opinion that a more scientific approach must be made before a definite " rate per density " can be quoted. Your contributor quotes 13·5 kc/s per hour with a 2·5 solution. In the light of experience gained it seems obvious that the ammonium bifluoride solution must be agitated and its temperature kept constant before figures can be quoted for one particular crystal.

Would-be crystal eroders should beware, especially if they have only a few kc/s to erode!

Yours faithfully,

Birmingham. K. W. DARBY (G3MLD).

Comment by G5UM: The empirical approach is the best when dealing with quartz crystal erosion: in other words try it and see. More scientific and precise methods are already available and are used by the crystal suppliers; but for cheapness the " do-it-yourself " method described in the July BULLETIN will be found hard to beat. The rates of erosion reported there were, of course, only those coming within the experience of two members; others may find them to be higher or lower. The important thing is to check a crystal under erosion more and more often as the target frequency is approached.—J. H.

S.s.b. on the CR100

DEAR SIR,—In his letter on the above topic in the October BULLETIN Mr. Harvey (G3IUG) refers to the orientation of the pin in the spindle of the b.f.o. trimmer on the CR100. Indeed, his remarks can be borne out by reference to p. 30 of the excellent Marconi Technical Handbook T.1868/1 on this receiver.

I would like to point out that after lining up the b.f.o. on my own CR100/1 by the method given in the Handbook (with the pin horizontal) I found myself in difficulties when zero-beating my transmitter on c.w. signals. Removal of the can on the b.f.o. coil soon revealed that the pin in question was quite definitely vertical when the condenser vanes were half-mesh.

Since I have no reason to suspect that the trimmer is other than that fitted by the makers I would suggest that any CR100 user who experiences difficulty after lining up the b.f.o. by Mr. Harvey's method should follow the original advice of Mr. Thornley and remove the b.f.o. can forthwith.

Finally, I would point out an apparent error in the third paragraph of Mr. Harvey's letter. The setting of the operational switch should surely be C.W.-A.V.C., not MOD-A.V.C. as stated, when seeking to zero-beat the receiver against a B.B.C. transmission.

Yours faithfully,

Bromborough, Wirral. G. ROONEY (G3MKH).

Single Sideband Under Attack

DEAR SIR,—What a pity the advocates of Single Sideband always overstate their case. Probably no method of modulation has been so insistently " sold " to the amateur fraternity as s.s.b., and in view of the continuous propaganda for it, it is surprising what slow progress it is making.

G2DAF in his open letter to G8ON claims first a 6db power gain because the carrier and unwanted sideband are not transmitted. He then claims a *further* 3db gain at the reception end because the pass band of the receiver is restricted to one sideband only. This 3db gain at the reception end is, of course, available to a.m. reception also. As G2DAF points out, only one sideband is necessary and, consequently, when receiving an a.m. signal under conditions of severe QRM, I listen to one sideband only. In fact, I use the s.s.b. facility on my receiver *without* the b.f.o. to restrict my pass band to one sideband only. But with an a.m. signal I have the *choice* of which sideband to select whichever is free from QRM. No such choice is available on s.s.b. transmission.

It seems a gross exaggeration, therefore, to claim the further 3db gain on the reception end when this is equally available on any a.m. station.

I do not doubt that s.s.b. has certain advantages—and I propose to try it myself—but why must the s.s.b. advocates overstate their case?

Yours faithfully,

E. M. WAGNER (G3BID).

London, N.W.3.

Elimination of the carrier and thus of heterodynes is one indisputable advantage of s.s.b.—EDITOR.

Unlicensed Operation and the Helping Hand

DEAR SIR,—Hardly a month goes by without a report " Pirate Fined " appearing in the BULLETIN. I have gained the impression from the wording of these reports that the action of the offender, most frequently a youngster, is viewed with great disapproval and condemnation by all. Do you think this quite the right attitude for us to take? I am wondering if the Society is missing a golden opportunity in not offering a helping hand. I think I should be correct in saying that the majority of licensed amateurs today started along the Ham Radio Road by taking at least one step as a pirate!

Let us take the case of a teenager in trouble with the G.P.O. Has he not got into these difficulties due to the same enthusiasm which has made us all amateurs. Could not the Society be brought into the picture at the stage of Court proceedings? I am sure a local amateur or Society Representative could play the part of a Probation Officer and, in genuine cases, undertake to take the offender under the wing of the local branch and show him the correct path to real Amateur Radio and ultimately a licence legally to pursue his hobby. Among these young offenders we shall find many who will become the amateur of tomorrow; men to whom the country may be grateful to turn again in time of war.

Let the Society give a lead here in the form of a helping hand to these youngsters giving them a lift over the stile and on to the right path rather than letting them break through the hedge and run amok in the corn, bringing trouble to themselves and all others.

Yours faithfully,

Kingsbridge, Devon. R. B. HOLMAN (G2DYM).

Third Party Messages

DEAR SIR,—Recent letters on Third Party Message Handling ignore the fact that a limited facility, for the noblest purposes, already exists. Mr. Beal talks of " justification." What better justification can be found than already exists? Mr. Bryant talks of the development of first-class operators. The ubiquity of the teleprinter answers his question!

Does not the present crop of appeals for third party facilities stem from the general decline in conversational ability—that some amateurs prefer to be mere agents for the transmission of someone else's original(?) thought than to contribute their own thoughts to the common pool? In this era of commercially-built gear is the pioneer " do-it-yourself " spirit dying out to the extent that we are losing the will or ability to make interesting and intelligent conversation?

Dr. Johnson, discussing the art of conversation, said, " There must be knowledge; there must be command of words; there must be imagination; and fourthly, there must be presence of mind and resolution that is not to be overcome by failures." In which are we lacking?

Commercial experience shows that the transmission of other peoples' trivia is better performed by a machine. Many of us are already operators only, as opposed to the " old timers " who were experimenters and scientists. Are we now to degenerate into mere automatons?

Yet the demand for this facility shows that the desire to conquer pastures new is not dead. Let it be turned to other outlets—and let us remain Radio *Amateurs*!

Yours faithfully,

Lichfield, Staffs. E. ARNOLD MATTHEWS (G3FZW).

(*Mr. Matthews is Honorary Secretary, R.A.E.N. Committee.*—EDITOR.)

DEAR SIR,—I should like to add a plea that traffic handling be permitted by holders of the U.K. Amateur (Sound) licence, subject to the usual provisions that messages are non-political, non-religious and non-business and that they be limited to c.w.

The arrangement could be restricted in the U.K. to the relay of traffic to and from the Commonwealth amateurs and to properly authorized Army/Navy/R.A.F. club stations and individuals operating abroad. I am certain this facility, if granted, would cause no great loss, if any at all, to the G.P.O. and the cable companies, in fact the final clearance of this personal type of traffic, especially in the U.K., would result in the use of either the telephone or postal services. Traffic handling could be another fascinating sideline to amateur operation for the keen c.w. man.

Yours faithfully,

Rochdale, Lancs. P. N. PITT (G3ICH).

Forthcoming Events

Details for inclusion in this feature should be sent to the appropriate Regional Representatives. 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 copy in the style used below.

DATES FOR YOUR DIARY

November 23-26.—R.S.G.B. International Radio Hobbies Exhibition.
December 16.—Annual General Meeting at Over-Seas House, London, S.W.1.
March 24, 1961.—Lecture Meeting at I.E.E., London. Speaker: G. Storey (G3HTC).
April 23, 1961.—Region 1 O.R.M. at Blackpool.
June 18, 1961.—Longleat Mobile Rally (tentative).

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 13 (A.G.M. & Junk Sale), The George Hotel, Kay Gardens.
Chester.—Tuesdays, 8 p.m., Y.M.C.A.
Crosby.—Tuesdays, 8.30 p.m., Colonsay, Crosby Road South, Waterloo.
Liverpool (L. & D.A.R.S.).—Tuesdays, 8 p.m., Gladstone Mission Hall, Queens Drive, Stoneycroft.
Macclesfield.—November 15, 29, December 13, 42 Jordangate.
Manchester (M. & D.R.S.).—December 12, Wellington Hotel, Nicholas Croft, High Street, off Market Street.
Manchester (S.M.R.C.).—Fridays, 7.30 p.m., Ladybarn House, Mauldeth Road, Fallowfield.
Morecambe.—December 7, 125 Regent Road.
Preston (P.A.R.S.).—November 22, December 13, St. Paul's School, Pole Street.
Southport (S.R.S.).—Thursdays, 8 p.m., The Esplanade.
Stockport (S.R.S.).—November 23, December 7, 21, The Blossoms Hotel, Buxton Road.
Wirral (W.A.R.S.).—November 18, December 2, 16, 7.45 p.m., 4 Hamilton Square, Birkenhead.

REGION 2

Barnsley.—November 25 (Display of Members' Equipment), December 9 (Surprise Item), December 23 (no meeting), 7.30 p.m., King George Hotel, Peel Street.
Bradford (B.A.R.S.).—November 22 ("Modulation" by D. M. Pratt, G3KEP), December 6 (Junk Sale), 7.30 p.m., Cambridge House, 66 Little Horton Lane, Bradford 5. December 20, Social Evening at Mechanics' Institute Café.
Halifax (H. & D.A.R.S.).—December 6 ("Where, When and What to Look For" by G3IGW), December 20 (Informal), 7.30 p.m., Sportsman Inn, Ogden.
Scarborough (S.A.R.S.).—Thursdays, 7.30 p.m., Chapman's Yard, North Street, Scarborough.
Sheffield.—December 14 (Exhibition of Home-made Gear), 8 p.m., Albreda Works, Lydgate Lane.

REGION 3

Birmingham (Bournville). — November 18 ("Modern Communication Receiver," Part 2, by G3GVA), December 2 ("Birmingham City Radio Services", by G. Brown, G5BJ), December 16 (Films: "Transistors" and "R.A.E.N."), 7.30 p.m. Deputy Staff Lounge and Lecture Room, Cadbury Bros., Bournville. November 26, Visit to R.S.G.B. Radio Hobbies Exhibition, London. **(South).**—November 17 (Brains Trust), 7 p.m., Friend's Meeting House, Moseley Road, Birmingham.
Stourbridge and District.—November 26, Visit to R.S.G.B. Radio Hobbies Exhibition, London. December 6 ("Mobile Gear" by Ted Morgan, G3COD), Brotherhood Hall, Scotts Road, Stourbridge.

REGION 4

Derby (D. & D.A.R.S.).—November 16 (Stereo Demonstration at Boulton School), November 23 (Discussion on Direction Finding Techniques), November 26 (Annual Trip to Hobbies Exhibition), November 30 (Open Evening), December 7 (Surplus Sale), December 9 (Christmas Party), December 14 (Film Show—"This is the B.B.C.", "Approach to Science" and "Piping Hot") 7.30 p.m., Room No. 4, 119 Green Lane, Derby.
Derby (D.S.W. Exp. S.).—Fridays, 7.30 p.m., Sundays, 10.30 a.m., Nunsfield House, Boulton Lane, Alvaston, Derby.
Grimsby (A.R.S.).—November 24, December 8, 8 p.m., R.A.F.A. Headquarters, Abbey Drive West, Grimsby.
Leicester (L.R.S.).—Mondays, 7.30 p.m. (Morse Tuition, 7.30 p.m.—8.30 p.m.), Club Rooms, Old Hall Farm, Braunstone Lane, Leicester.
Lincoln (L.S.W.C.).—November 16, 30, December 14 (R.A.E. Class), November 23 (Visit to A.E.I. Works, 7.30 p.m., Carholme Road), December 7 (Mullard Film Show, 7.30 p.m., Technical College, Cathedral Street, Lincoln).
Melton Mowbray (A.R.C.).—December 8 (Shack Visit and General Discussion), 7.30 p.m., J. L. Bowley (G3FXP), 68 Eastfield Avenue, Melton Mowbray, Leics.
Newark (A.R.C.).—December 6, 7.15 p.m., Northgate House, Newark.
Newark (Magnus Grammar School).—Tuesday evenings and Friday afternoons in Junior Physics Lab.
Nottingham (A.R.C.).—Thursday evenings reserved for R.A.E. Classes by Alan Davies (G3LXL). Tuesdays (Open Night), 7.30 p.m., Community Centre, Woodthorpe House, Mansfield Road, Sherwood, Nottingham.
Peterborough (A.R.C.).—December 2 (Discussion on Receivers), 7.30 p.m., Peterborough Technical College.
Retford & Worksop (N.N.R.S.).—Tuesdays (Construction and Beginners Night including Morse Tuition), Thursdays, 7.30 p.m. (Main Lecture Night), Club Room, Victoria Hall, Eastgate, Worksop, Notts.
Wellingborough (W.R.C.).—November 17 (Film night on British Railways), November 24 (Open Night), December 1 ("Cumberland Expedition 1960"), December 8 (Open Night), December 15 (Annual Christmas Dinner—Hind Hotel), 7.30 p.m., Silver Street Club Room above W.I.C.S. Fruit Shop.

REGION 6

Cheltenham.—First Thursday in each month, 8 p.m., Great Western Hotel, Clarence Street.
High Wycombe.—November 24, 7.30 p.m., G6JK, 1 Windsor Hill, Princes Risborough. December 22, 7.30 p.m., G3BZM, 7 The Quadrant, Totteridge. **(C.A.R.C.).**—November 24 ("Electronic Music" or "Cathode Ray Tubes" by G3INZ), 8 p.m., British Legion Hall, St. Mary Street, High Wycombe.

REGION 7

Acton, Brentford and Chiswick.—November 15 (Discussion and Junk Sale), 7.30 p.m., A.E.U. Rooms, 66 High Road, Chiswick.
Barnet.—November 29, 7.30 p.m., Red Lion Hotel, Barnet.
Bexleyheath (N.K.R.S.).—November 24, December 8, 8 p.m., Congregational Hall, Bexleyheath (Nr. Clock Tower).
Croydon (S.R.C.C.).—December 13, 7.30 p.m., "Blacksmith Arms," South End, Croydon.
Dorking (D. & D.R.S.).—Second and fourth Tuesday in each month, 8 p.m., Star and Garter Hotel, Dorking.
Ealing.—Sundays, 11 a.m., A.B.C. Restaurant, Ealing Broadway, W.5.
East London.—November 20 ("Single Sideband." The Lambourne Rooms, Town Hall, Ilford, Essex.
East Molesey (T.V.A.R.T.S.).—December 7 ("Single Sideband," by a representative of Redifon), Carnarvon Castle Hotel, Hampton Court.
Enfield and District.—November 24, 7.30 p.m., George Spicer School, Southbury Road, Enfield.
Guildford (G. & D.R.S.).—Fourth Friday in each month, 7.30 p.m., "The Cannon," Portsmouth Road, 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), Fridays (Club), 7 p.m., Montem School, Hornsey Road, 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).
Mitcham (M. & D.R.S.).—November 18 (Lecture/demonstration by G3MSS of Collins Radio Co.), December 2 ("Round and About with a Camera," by G3OCA), December 16 (Christmas Draw and Constructional Contest), 8 p.m., "The Cannons," Madeira Road, Mitcham.
New Cross (C.A.R.S.).—Fridays, 7.30 p.m., Sundays, 11.30 a.m. (Audio Section last Tuesday in each month), 7.30 p.m., 225 New Cross Road, London, S.E.14.
Norwood and South London (C.P. & D.R.C.).—November 19 ("Communications and the East African Safari," by M. G. Pavely, VQ4CW, G3GWD), December 6 (Morse Class and Practical Work), 8 p.m., Windermere House Annexe, Westow Street, Crystal Palace.
Romford (R. & D.R.S.).—Tuesdays, 8.15 p.m., R.A.F.A. House, 18 Carlton Road, Romford.
Southgate, Finchley and District.—December 8 (A.G.M. and talk on "Stabilized Power Supplies"), 7.30 p.m., Arnos School, Wilmer Way, N.14.
South Kensington (C.S.R.S.).—November 15 (Films: "The Transistor" and "The Electron Microscope"), December 6 (Stereo, Hi-Fi and Audio Demonstration by Whiteley Radio), 6 p.m., Science Museum, South Kensington.

LONDON MEMBERS' LUNCHEON CLUB

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

at 12.30 p.m. on Fridays, November 18 and December 16, 1960.

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

REGION 8

Crawley (C.A.R.C.).—November 24 (Film Show), December 8 (Informal), 8 p.m., "The Brewery Shades," Crawley High Street.
Tunbridge Wells (W.K.A.R.S.).—November 25 (Talk on S.s.b.), December 9 (Audio Night), December 21 (Christmas Party), 7.15 p.m., Culverden House, Culverden Park Road, Tunbridge Wells.

REGION 9

Bath.—December 12, 7.30 p.m., Committee Room, Bath Technical College.
Bideford.—First Thursday in each month, 7.30 p.m., alternately at T. G. Ward (G2FKO), 38 Clovelly Road (Bideford 964) and D. H. Jones (G3BO), Rosebank, Westcombe (Bideford 550).
Bristol.—November 18 ("Television Servicing," Part 2, by R. E. Griffin, M.I.R.E., G5UH), 7.15 p.m., Carwardines Restaurant, Baldwin Street, Bristol 1.
Exeter.—Second Thursday in each month, 8 p.m., Y.M.C.A., St. David's Hill, Exeter.
Falmouth.—First Wednesday in each month, Y.M.C.A., Falmouth.

(*Continued on page 247*)

Torquay.—Second Saturday in each month, 7.30 p.m., Y.M.C.A., The Castle, Torquay.
Weston-super-Mare.—Second Wednesday 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 12, 7.30 p.m., Social Evening and Dinner at the " White Hart," St. Mellons.
Penarth.—November 28 (" More about the Electricity Supply Industry," by GW2BBO), 7.30 p.m., R.A.F.A. Club, Windsor Road, Penarth.

REGION 11

Prestatyn (F.R.S.).—December 5 (Judging of Home-constructed Gear), 7.30 p.m., Ffrith Hotel, Ffrith, Prestatyn.

REGION 12

Aberdeen (A.A.R.S.).—November 18 (Presidential Address), November 25 (Junk Sale), December 2 (" An introduction to Electronic Computers " by S. T. Forbes, B.Sc. (Hons.)), December 9 (" Why S.S.B.? " by Micky Morrisey, GM5YK), 6 Blenheim Lane, Aberdeen.

REGION 14

Glasgow.—Second Friday in each month, 7.30 p.m., Woodside Halls, Clarendon Street, N.W. (near St. George's Cross Underground).
Prestwick.—Third Sunday in each month, 7.15 p.m., Royal Hotel, Prestwick.

REGION 17

Newbury (N. & D.A.R.S.).—November 25 (" Aerials "), December 30 (Judging of Home-constructed Equipment), 7.30 p.m., Elliott's Canteen, West Street, Newbury.
Portsmouth.—Tuesdays, 7.30 p.m., Scarrs, 183A Albert Road, Portsmouth.
Southampton.—First Saturday in each month, 7 p.m., Prospect House (back of Gas Board showrooms), Above Bar.

Regional and Club News

Amateur Radio Club of Nottingham.—Meetings have been arranged at Woodthorpe House, Mansfield Road, for November 15 ("Aerials "), November 22 (Open Night for R.S.G.B. members), November 29 (Junk Sale), December 6, December 13 (Colour Slides of Derby Club Activities by G3FGY) and December 20 (Film Show of South Pole Expedition). The Christmas Party will be held on December 22. Four members passed the May R.A.E. and two are already licensed. Classes for next year's exam. are run under the direction of G3LXL and newcomers will be welcome. *Hon. Secretary:* E. C. Weatherall, 16 Avebury Close, Clifton, Nottingham.

Bradford Amateur Radio Society.—A Junk Sale will be held at Cambridge House, 66 Little Horton Lane, Bradford 5, on December 6 at 7.30 p.m. A Social Evening at the Mechanics' Institute Café is planned for December 20. *Hon. Secretary:* M. T. Powell (G3NNO), 28 Gledhow Avenue, Roundhay, Leeds 8.

Bristol.—Nearly 70 members and visitors were present at the October meeting when J. H. A. Newth (G3EJN) gave an illustrated talk entitled " TV and Radio Line Distribution Systems." Among the visitors present was VE2AQY (ex-G3HSD). Final arrangements were made for the contest versus M.A.R.S. on October 30. On November 18, R. E. Griffin, M.I.R.E. (G5UH), will conclude his talk on " Television Servicing " by giving a number of practical demonstrations. A talk on " Modulation Systems " will be given by D. V. Newport (G3CHW) on December 9. Local members who are not already on the Group's mailing list are invited to obtain a copy of the programme for future meetings from the *Hon. Secretary:* D. F. Davies (G3RQ), 51 Theresa Avenue, Bishopston, Bristol 7.

Chester and District Radio Society.—The T.R. is due to open a discussion on R.A.E.N. at the meeting at the Y.M.C.A. on November 15 while the Monimatch will be described by G3EWZ on November 22. On November 26 a party will be visiting the R.S.G.B. Radio Hobbies Exhibition. The Christmas Meeting will take place on December 20. The next club net is due to be held on December 6. *Hon. Secretary:* H. Morris (G3ATZ), 24 Kingsley Road, Boughton Heath, Cheshire.

Civil Service Radio Society.—The winter session has commenced with increased attendances at both lectures and informal meetings. Future talks will be on v.h.f. techniques, radio control of models, and G.P.O. ship-to-shore circuits with a visit to a coastal radio station. Prospective members may obtain details from the *Hon. Secretary:* G. Lloyd-Dalton, 2 Honister Heights, Purley, Surrey. A demonstration of hi-fi reproduction will be given by Whiteley Radio and Electrical Ltd. on December 6. Visitors will be welcome but should telephone G. Voller (G3JUL) at Kensington 6371 prior to the meeting.

Cornish Radio and Television Club. — At the October meeting a recent R.A.E.N. exercise was discussed. Bernard Davis (G3OMW) has been elected Vice-Chairman in succession to J. Share (G3OKA) who is now at college. *Hon. Secretary:* W. Gilbert, 7 Poltair Road, Penryn, Cornwall.

Crawley Amateur Radio Club.—On November 24 H. J. P. Lees is arranging a film show which will include " Special Quality Valves " and " The Invisible Face." Visitors will be welcome at the meeting which will be held at " The Brewery Shades," Crawley High Street. *Hon. Secretary:* R. G. B. Vaughan (G3FRV), 9 Hawkins Road, Tilgate, Crawley.

Crystal Palace and District Radio Club.—At the meeting at Windermere House, Weston Street, Crystal Palace, on November 19, M. C. Paveley (VQ4CW, G3GWD) will give a talk on " Communications and the East African Safari." *Hon. Secretary:* G. M. C. Stone (G3FZL), 10 Liphook Crescent, London, S.E.23.

Derby and District Amateur Radio Society.—Preparations are under way to celebrate next year the fiftieth anniversary of the foundation of the Derby Wireless Club in 1911. A Dinner in honour of Founder Members will be held on April 22, 1961. Details of the programme for the next few weeks are given in *Forthcoming Events. Hon. Secretary:* F. C. Ward (G2CVV), 5 Uplands Avenue, Littleover, Derbys.

Dorking and District Radio Society.—A film show will be held at the Star and Garter Hotel, Dorking, on November 29 at 8 p.m. when films of technical and general interest will be shown. Ladies and visitors are invited to attend. *Hon. Secretary:* J. Greenwell (G3AEZ), Wigmore Lodge, Beare Green, Dorking.

East Kent Radio Society.—This society is one of the many making up a party to visit the R.S.G.B. Radio Hobbies Exhibition. It is expected that about 25 members will make the trip. Two members have passed the R.A.E. while others are studying under the guidance of G3NFS. G3LCK is giving Morse instruction. Details of the annual Christmas " Bean Feast " to be held next month may be obtained from the *Hon. Secretary:* D. Williams (G3MDO), " Llandogo," Bridge, near Canterbury.

East London R.S.G.B. Group.—About 180 members and friends attended the meeting on October 9 when Capt. P. P. Eckersley, M.I.E.E., gave a talk entitled " Radio over the Years." The Chairman was the D.R., J. J. Hollington (G4GA). Others present included the Deputy Mayor of Ilford, Alderman Hedley, the Society's Hon. Treasurer, Norman Caws, F.C.A. (G3BVG), and Council Members C. H. L. Edwards (G8TL), A. O. Milne (G2MI), G. M. C. Stone (G3FZL) and E. W. Yeomanson (G3IIR). The Region 7 Representative F. G. Lambeth (G2AIW) also attended.

Falkirk.—Although the number of contacts was not very great, the Group's recent Field Day was most enjoyable. GM3NHQ/P and GM4QV/P were operated successfully, the best DX being an OK1 on Top Band. All contacts are being confirmed by special QSL card. *Town Representative:* A. Grassam (GM3NVT), 5 Bantaskine Gardens, Falkirk.

Grafton Radio Society.—A most interesting evening was spent on October 21 when Council Member David Deacon (G3BCM), Chairman of the R.S.G.B. TVI/BCI Committee, gave a talk entitled " Interference and the Radio Amateur." Other recent events have been the first of a monthly series entitled " S.W.L. Corner " when P. F. Bernal (G3KQZ) gave a talk on receivers, and Bernard Wilson a talk and film on Tape Recording. The annual visit to the R.S.G.B. Radio Hobbies Exhibition is arranged for November 25 while G2CJN will give hints on construction in the next " S.W.L. Corner " on December 2. The Christmas Junk Sale will take place on December 16. *Hon. Secretary:* A. W. H. Wennell (G2CJN), 145 Uxendon Hill, Wembley Park, Middlesex.

Grimsby Amateur Radio Society.—At the A.G.M. held at R.A.F.A. Headquarters, Abbey Drive West, Grimsby, on October 13 the following were elected to serve for the ensuing year. *Chairman*—H. B. Bellairs (G3LXX); *Vice-Chairman*—M. Knights (G3NJF); *Hon. Secretary*—P. Mason (G3NNN), 213 Clee Road, Cleethorpes, Lincs. *Hon. Treasurer*—G. Francis; *Committee Member*—L. Haywood. The A.S.R. is H. O. Gilliatt (G3LOP). Details of meetings on alternate Thursdays are given in *Forthcoming Events.*

Halifax and District Amateur Radio Society.—Recent events have included a recorded talk by W1PFA on the " St. Pierre and Miquelon DXpedition," illustrated with slides and presented by G3LB. Details of future plans are given in *Forthcoming Events. Hon. Secretary:* A. Robinson (G3MDW), Candy Cabin, Ogden, Halifax.

Harrow, Radio Society of.—On November 18, D. Nappin (G3MLS) will give a talk on Stabilized Power Supplies while on December 2 there will be a talk entitled " My Rig " by F. Hunt (G3LNQ) who recently gave members an interesting account of his unsuccessful battle with the local authorities over the erection of a second aerial mast in his back garden, in which he was backed by the R.S.G.B., both morally and financially. November 25 will be a Practical Night. Club meetings are held at the Roxeth Manor Secondary School, Eastcote Lane, South Harrow, on Fridays at 8 p.m. preceded by a net on Top Band in which non-members are invited to join. *Hon. Secretary:* S. C. J. Phillips, 131 Belmont Road, Harrow Weald, Middlesex.

Liverpool and District Amateur Radio Society.—Arrangements for November include a Junk Sale on the 15th and an Open Night on the 22nd. On November 29, G3KYX and G3LRB will give talks under the title " Safety in the Shack." Details of other activities may be obtained from the *Hon. Secretary:* H. James (G3MCN), 448 East Prescot Road, Knotty Ash, Liverpool 14.

Midland Amateur Radio Society.—At the A.G.M. the following were re-elected: *President*—T. P. Douglas (G3BA); *Hon. Treasurer*—F. J. Taylor (G3EKN); *Hon. Secretary*—C. J. Haycock (G3JDJ), 36 Portland Road, Birmingham 17. The Region 3 Representative, A. Higgins (G8GF), and Mrs. Higgins were among the 80 people who attended the Society's Dinner in Erdington on October 7. Meetings continue to be held in the Affiliated Societies' Room at the Birmingham and Midland Institute, Paradise Street, Birmingham, 1, the next two being on November 15 and December 1. Visitors are always welcome.

Mitcham and District Radio Society.—The society participated in the telephony section of the *CQ* World Wide DX Contest under the call-sign G3LCH. It is also planned to take part in the C.W. Section and in the *Short Wave Magazine* club contest. *Hon. Secretary:* M. Pharaoh (G3LCH), 1 Madeira Road, Mitcham.

Newbury and District Amateur Radio Society.—There will be a talk on aerials at the meeting on November 25 while the judging of entries in the Home Constructed Equipment Competition will take place on December 30. Details of other activities may be obtained from the *Hon. Secretary:* J. A. Gale (G3LLK), " Wild Hedges," Crookham Common, near Newbury.

Norwich and District Radio Club.—Recent activities have included talks on aerials, v.h.f. operation, single sideband, a quiz and mobile rallies and treasure hunts. Members have also visited Pye Telecommunications at Oulton Broad. Meetings are held on Fridays at 8 p.m. at the Golden Lion, St. John Maddermarket. On the second Tuesday in each month meetings for R.S.G.B. members are held in the club rooms under the chairmanship of the A.S.R., O. F. Simkin (G3HYJ). *Hon. Secretary:* H. Staff (G4KO), 59 Charles Avenue, Thorpe, Norwich, NOR. 66.T.

Peterborough Amateur Radio Society.—At the first meeting of the winter session held at Peterborough Technical College a lecture on ultra high frequency communication and parametric amplifiers was given by Douglas Gordon (G3FJK). Bill Miles (G3GCK) demonstrated his new all-band transmitter whilst the chairman, Douglas Byrne (G3KPO), showed members his RTTY teleprinter. Arrangements were made to hold meetings at the Technical College on the first Friday in each month at 7.15 p.m.

Purley and District Radio Club.—A special meeting to discuss the programme of winter activities will be held at the Railwaymen's Hall, Whytecliffe Road, Purley, at 8 p.m. on November 18. *Hon. Secretary:* E. R. Honeywood (G3GKF), 105 Whytecliffe Road, Purley.

Royal Air Force Amateur Radio Society.—Group Captain A. H. Dormer (G3DAH, ex-VS1BD) has been appointed S.T.O. and Asst. Commandant of R.A.F. Locking and is the new Chairman of the R.A.F.A.R.S. Committee. All members are invited to attend the A.G.M. to be held in the main conference room at the Air Ministry, Whitehall, at 2.15 p.m. on Friday, November 25, 1960. Articles and activity reports for the winter issue of *QRV* should be sent to G3GNS at Locking not later than the end of November.

Reigate Amateur Transmitting Society.—Members visited Gatwick on October 8 while G3VK gave a talk on R.A.E.N. at the September meeting. Five members are awaiting the results of the October R.A.E. " Aerials for the S.W.L." is the title of the talk to be given at The Tower, Redhill, on November 19 at 3.30 p.m. Premises suitable for a permanent clubroom are being sought. *Hon. Secretary:* F. D. Thom (G3NKT), 12 Willow Road, Redhill.

Slade Radio Society.—The A.G.M. is to be held on November 18 while a visit to the R.S.G.B. Radio Hobbies Exhibition has been arranged for November 26. Meetings will be held at the Church House, High Street, Erdington, on December 2 (" Sound Effects " by D. Brown), December 16 (" Fun and Games " by L. H. Blackwell and G. L. Turner) and December 30 (" The Human Machine as a Radio Operator," a recorded R.S.G.B. lecture by F. J. H. Charman, B.E.M., G6CJ). *Hon. Secretary:* C. N. Smart, 110 Woolmore Road, Erdington, Birmingham, 23.

Southampton.—When the *U.S.S. Changri La* visited the city recently, local members entertained K9CJM of Wisconsin, W8JIA of Ohio and K4BCM of Virginia who are members of the crew. Later, members visited the ship at the invitation of the U.S. amateurs.

South Manchester Radio Club.—At the A.G.M. the following were elected: *Chairman*—D. Barber (G2AKR); *Vice-Chairman*—D. Alimundo (G4HK); *Hon. Secretary* — Fred Nicholls (G3MAX), 125 Rochdale Road, Manchester 4. *Hon. Treasurer*—N. Ashton (G3DQU); *Committee Members*—T. Arden (G3LJF), H. Reekie (G3OFC) and D. Provan (G3LQQ). The A.S.R. is Mark Denny (G6DN). A full programme of lectures and visits has been arranged for the winter session. Workshop facilities and instruments are available for members' use. The club station (G3FVA) is now installed in a separate operating room complete with transmitters and receivers for all bands.

South Shields and District Radio Club.—At the A.G.M. the following were elected: *Chairman*—O. Jackson (G3LKZ); *Hon. Treasurer*—J. R. Tyzack (G3ELP); *Hon. Secretary*—R. Ray (G3NCL), 16 Holystone Avenue, Gosforth, Newcastle-on-Tyne 3. Meetings are held on the last Wednesday in each month and on Fridays at 6.30 p.m. at Trinity House, Laygate Lane, South Shields. A programme of film shows, lectures, Morse classes and discussions is being drawn up.

Stoke-on-Trent Amateur Radio Society.—The Society's special station GB3SOT was again in operation at the Burslem Rotary Hobbies Exhibition in September. This was the last major event in the City's Jubilee Celebrations. After the opening ceremony the Lord Mayor visited the station. Among the attractions on the stand were a colour film of the 1960 North Midlands Mobile Rally and recordings of satellite transmissions. *Hon. Secretary:* V. J. Reynolds (G3COY), 90 Princes Road, Hartshill, Stoke-on-Trent.

Torbay Amateur Radio Society.—Recent meetings have been well attended and an excellent Junk Sale raised more than £6. Ernie Hayman (G3ABU) has given a talk on the D/F receiver and aerial which is to be the headquarters project during the next few months. Plans are being made to hold D/F Contests in 1961. Burn Symons (G3LKJ) was due to report on the Weymouth O.R.M. at the November meeting. *Hon. Secretary:* G. Western (G3LFL), 118 Salisbury Avenue, Barton, Torquay.

Wanstead and Woodford Radio Society.—Membership is rising and to cater for the younger people a Junior Section has been formed. Morse practice and lectures on fundamental radio principles are given on Tuesday evenings. The Society now has its own newsletter. A party is being arranged to visit the R.S.G.B. Radio Hobbies Exhibition. Prospective members may obtain details of activities from the *Hon. Secretary:* J. R. Seaman, 67 Beattyville Gardens, Ilford, Essex.

News from Abroad

British Honduras Radio Amateur Club.—The officers of this recently formed club are: *President*—Leocadio Hopun Alpuche (VP1HA); *Vice-President*—J. Hopun (VP1JH); *Hon. Treasurer*—J. Anguilar (VP1AM); *Hon. Secretary*—R. O. Taylor (VP1RT), P.O. Box 280, Belize, British Honduras; *Assistant Hon. Secretary*—W. Swan (VP1WS). The foundation of the club is being marked by the issue of a new certificate, the Baymen Diploma.

Can You Help?

● R. N. Hedges (G3HCV), 34 Grasmere Avenue, London, W.3, who requires the manual and/or circuit diagram for ex-A.M. oscilloscope type 11?

● J. R. Tilsley (B.R.S.22360), " Penwartha," Hafodty Lane, Upper Colwyn Bay, North Wales, who requires the handbook and/or circuit diagram for the ex-Government oscilloscope type TS34AP and details of any modifications which improve its performance?

● F. A. Grant (G3FTV), 49 Kirkby Road, Ripon, Yorkshire, who requires the circuit diagram for the Indicator Unit No. 110 QB29 and information on its conversion to an oscilloscope?

Radio Amateurs' Examination

THE question paper set by the City and Guilds of London Institute for the Radio Amateurs' Examination on May 6, 1960, was as follows:

Eight questions in all are to be attempted. Both questions in Part I (which are compulsory) and six others from Part II.
Failure in either part will carry with it failure in the examination as a whole.
Logarithm tables are supplied: they must be given up at the close of the examination. Slide rules may be used.

Part I

Both questions must be attempted in this part.

1. What conditions are laid down by the amateur transmitting licence as regards:
(a) the avoidance of interference with other amateur stations and any other wireless telegraphy
and (b) the control and measurement of the frequency of transmissions? (*15 marks*)

2. Explain what is meant by over-modulation of a radiotelephony transmitter. What are the indications that a transmitter is being over-modulated, and what are the effects of over-modulation on:
(a) the transmission from the station concerned
and (b) transmissions from stations transmitting on adjacent channels? (*15 marks*)

Part II

Six questions only to be attempted in this part.

3. Draw a circuit diagram of the power amplifier stage of a transmitter for use in the amateur bands between 3 Mc/s and 30 Mc/s. Sketch the layout of the tank circuit and describe the construction of the coils and capacitors of which it is composed. (*10 marks*)

4. What are the factors which limit the flow of anode current in a thermionic valve? Explain how the anode current in a triode valve is controlled by the potential of the grid with respect to the cathode. (*10 marks*)

5. Describe two methods of coupling a circuit carrying alternating current at radio frequency with another similar circuit. Illustrate your answer with practical examples. (*10 marks*)

6. Describe and explain a method of modulation suitable for use in an amateur telephony transmitter. (*10 marks*)

7. A coil whose inductance is 10 henrys is connected in series with a capacitor of 10 micro-farads across a 240 volt, 50 c/s a.c. supply. What is the potential difference between the terminals of:
(a) the inductor
and (b) the capacitor?
(Disregard any resistance of the coil.) (*10 marks*)

8. Describe the propagation of electro-magnetic waves from a simple vertical aerial. (*10 marks*)

9. Draw a block diagram of a complete transmitter capable of transmitting c.w. or telephony in the 14, 21 and 28 Mc/s bands. Explain the functions of each stage of the equipment. (*10 marks*)

10. Describe with the aid of diagrams a power unit suitable for supplying anode and heater power to a receiver. Explain the need for smoothing of the anode supply. (*10 marks*)

Examiners' Comments

Although the majority of failures were the result of a general inadequacy in all questions attempted, there were an appreciable number who failed in Part I only. Many candidates who failed did so because of inadequate and superficial treatment of the questions. Diagrams and definitions alone are insufficient when descriptions and explanations are asked for.

The following comments were made on individual questions:

Question 1. Far too many candidates failed to give sufficient attention to a study of the licence conditions.

Question 2. Generally quite well done. A number of candidates treated the question too lightly, giving only very brief and inadequate notes. Some confusion evidenced as to the practical effects of over-modulation on a transmission.

Question 3. The circuit diagrams were generally well done, but many candidates omitted to sketch the layout, and descriptions of the coils and capacitors were too brief.

Question 4. Comparatively few candidates were able to give a simple description of the action of the control grid in a triode.

Question 5. Too many candidates merely quoted two practical examples.

Question 6. Quite well done by most candidates. The main cause of criticism was superficial treatment.

Question 7. The chief causes of difficulty were:
(a) Use of long and involved methods of calculation and
(b) failure to appreciate the method of calculating the total impedance in an a.c. circuit.
Many candidates had no difficulty with this question.

Question 8. This question seemed to cause most difficulty. In general, the treatment was weak and only a comparatively small number of candidates gave good answers.

Question 9. Generally well done, but in many cases insufficient detail was shown on the block diagram and the notes were too brief.

Question 10. Generally well done.

Town Representative

THE following is an amendment to the list of Town Representatives published in the December 1959 issue.

REGION 7—LONDON EAST
EAST HAM. J. C. Brown (G3DBO), 19 Compton Avenue, London, E.6.

Affiliated Societies

THE following are additions to the list of Affiliated Societies published in the October 1960 issue.

Army Wireless Reserve Amateur Radio Society: c/o Major D. W. J. Haylock, 3 Norris Gardens, Grange Estate, Havant, Hants.
B.B.C. (Daventry) Club: Radio Section, Borough Hill, Daventry, Northants.
Ilford & District Radio Society (G3QU): c/o C. E. Largen, 44 Trelawney Road, Barkingside, Essex.
Lothians Radio Society: c/o L. Lumsden, 33 Hillview Drive, Edinburgh 12, Scotland.

THE following are amendments to the list of Affiliated Societies published in the October 1960 issue.

Amateur Radio Club (Gibraltar): c/o F/O I. A. McC. Douglas, Officers' Mess, R.A.F., Gibraltar.
Civil Service Radio Society: G. Lloyd-Dalton, 2 Honister Heights, Purley, Surrey.
Hull & District Amateur Radio Society (G3AMW): c/o G. G. Wray (G3MVO), 93 Wolfreton Lane, Willerby, Hull, Yorks.
Slade Radio Society (G3JBN): c/o C. N. Smart, 110 Woolmore Road, Erdington, Birmingham 23.
South Birmingham Radio Society (G3OHM): c/o T. Legg, (B.R.S.22830), Flat 3, 80 Alcester Road, Moseley, Birmingham 13, Warwicks.
Wolverhampton Amateur Radio Society (G8TA): c/o J. Rickwood (G3JJR), 738 Stafford Road, Fordhouses, Wolverhampton, Staffs.

Affiliated Society Representatives

DUE to a printer's error the names of the Barnet & District Radio Society, and the Bridlington & District Radio Society, appeared on page 185 of the October issue as having nominated Affiliated Society Representatives for the year 1960. No representatives have in fact been nominated.

Wireless World Diary 1961

TECHNICAL and general information of the kind so often needed but so seldom readily available will be found in the 80 page reference section of the 1961 *Wireless World Diary*. The information includes details of the world's television standards, base connections for more than 700 current receiving valves and the channels and frequencies of U.K. television and v.h.f. broadcasting stations.

The *Diary*, which is published by T. J. and J. Smith Ltd. in conjunction with the *Wireless World*, costs 4s. 9d. (rexine cover) or by post 5s. 3d. from R.S.G.B. Headquarters.

Can You Help?

● J. M. Lyons (GM3GUJ), 1 Thorfinn Place, Thurso, Caithness, who requires an operational/maintenance manual or any details of the Admiralty Pattern Wavemeter Type G.73 covering 100 kc/s to 25 Mc/s.?

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0B2	17/6	6AG5	5/6	6LD20	15/11	9BW6	15/3	14S7	27/10	80	9/0	DL94	7/6	EF40	15/0	HVR2	20/0	PCL83	11/6	U12/14	8/6	UF89	9/0
0Z4GT	5/0	6AK5	8/0	6L1	23/3	9D2	4/0	19AQ5	10/6	83	15/0	DL96	8/6	EF41	9/0	HVR2A	6/0	PCL84	12/6	U16	10/0	UL41	9/0
1A5	6/0	6AL5	4/0	6L6G	8/0	10C1	13/0	19H1	10/0	85A2	15/0	DL810	10/6	EF42	10/6	KF35	8/6	PEN25	4/6	U18/20	8/6	UL44	26/6
1A7GT	12/0	6AM6	4/6	6L7GT	7/6	10C2	26/6	20D1	15/3	150B2	15/0	DM70	7/6	EF50(A)	7/0	KL35	8/6	PEN45	19/6	U19	36/0	UL46	14/6
1C5	12/6	6AQ5	7/6	6L18	13/0	10F1	26/6	20F2	26/6	185BT	33/2	EA50	2/0	EF50(E)	5/0	KT2	5/0	PEN46	7/6	U22	8/0	UL84	8/6
1D5	9/0	6AT6	7/0	6N7	8/0	10P13	15/0	20L1	26/6	807	7/6	EA76	9/6	EF54	5/0	KT33C	10/0	PL33	19/3	U25	17/11	UY21	13/11
1D6	10/6	6AU6	10/0	6P28	26/6	11E3	15/0	20P1	26/6	956	3/0	EAC80	9/0	EF73	10/6	KT36	29/10	PL36	12/0	U26	10/0	UY41	7/6
1G6	17/6	6B8G	4/6	6Q7G	8/6	12A6	5/0	20P3	23/3	4033L	12/6	EAC91	4/6	EF80	7/0	KT41	12/6	PL38	26/6	U31	9/6	UY85	7/0
1H5GT	10/6	6BA6	7/6	6R7G	10/0	12AC6	15/3	20P4	26/6	5763	12/6	EAF42	9/0	EF85	7/0	KT44	12/6	PL81	10/6	U33	26/6	VP2	12/6
1L4	4/6	6BE6	6/0	6SA7GT	8/6	12AD6	17/3	20P5	23/3	7193	5/0	EB34	2/6	EF86	10/6	KT63	7/0	PL82	7/6	U35	26/6	VP4	15/0
1LD5	5/0	6BG6G	23/3	6SC7	7/6	12AE6	13/11	23A6G	10/6	7475	7/6	EB41	8/6	EF89	9/0	KT66	15/0	PL83	9/0	U37	26/6	VP13C	7/0
1LN5	5/0	6BH6	8/0	6SG7GT	8/0	12AH7	8/0	25L6	10/0	9002	5/6	EB91	4/0	EF91	4/6	KTW61	6/6	PL84	12/8	U45	9/0	VP23	6/6
1N5GT	10/6	6BJ6	6/0	6SH7	8/0	12AH8	12/6	25Y5	10/0	9006	6/0	EBC33	5/0	EF92	4/6	KTW62	7/6	PX4	10/6	U50	6/6	VP41	6/0
1R5	6/6	6BQ7A	15/0	6SJ7	8/0	12AT6	7/6	25Y5G	10/0	AC6PEN	7/6	EBC41	8/6	EK32	8/6	KTW63	6/6	PY31	16/7	U52	6/6	VR105	8/0
1S4	9/0	6BR7	15/0	6SK7GT	6/0	12AT7	6/0	25Z4G	9/6	ATP4	5/0	EBF80	9/0	EL32	5/0	KTZ41	8/0	PY32	11/6	U76	6/0	VR150	7/6
1S5	6/0	6BW6	8/6	6SL7GT	6/6	12AU7	6/6	25Z5	9/6	AZ31	10/0	EBF89	9/6	EL33	12/6	KTZ63	7/6	PY80	7/6	U78	5/0	VT61A	5/0
1T4	4/6	6BW7	7/0	6SN7GT	5/6	12AX7	7/6	25Z6G	10/0	B36	15/0	EC52	5/6	EL38	26/6	L63	6/0	PY81	8/6	U251	14/0	VT501	5/0
1U5	6/0	6C4	5/0	6SQ7GT	9/0	12BA6	8/0	27SU	19/11	BL63	7/6	EC54	6/0	EL41	9/0	MHD4	12/6	PY82	7/0	U403	16/7	W76	5/6
2X2	4/6	6C5G	6/6	6SS7	8/0	12BE6	9/0	28D7	7/0	CCH35	23/3	EC70	12/6	EL42	10/6	MHL4	7/6	PY83	8/6	U404	8/6	W81M	6/0
3A4	6/0	6C6	6/6	6U4GT	12/6	12BH7	21/3	30C1	8/0	CK506	6/6	ECC32	5/6	EL81	12/6	MHLD6		PZ30	19/11	U801	29/10	Z24M	24/7
3A5	10/6	6CD6G	36/6	6U5G	7/6	12E1	30/0	30F5	7/0	CV63	10/6	ECC33	8/6	EL84	7/6		12/6	QP21	7/0	UABC80	9/0	X61(C)	12/6
3B7	12/6	6CH6	9/0	6U7G	8/6	12J5GT	4/6	30FL1	10/0	CV428	30/0	ECC34	24/7	EL91	5/0	ML4	8/6	QP25	14/6	UAF42	9/6	X65	12/6
3D6	5/0	6D6	6/6	6V6G	7/0	12J7GT	9/6	30L1	8/0	D77	4/0	ECC35	8/6	EL95	10/6	MU14	8/0	QS150/15		UB41	12/0	X66	12/6
3Q4	7/6	6E5	12/6	6X4	5/0	12K5	17/11	30P12	7/6	DAC32	10/6	ECC40	23/3	EM34	9/6	N37	19/11		10/6	UBC41	8/6	X76(M)	14/0
3Q5GT	9/6	6F1	26/6	6X5GT	6/0	12K7GT	5/6	30PL1	11/6	DAF91	6/0	ECC81	6/0	EM80	9/0	N78	19/11	R12	9/0	UBF80	9/0	X78	21/3
3S4	7/0	6F6G	7/0	6/30L2	10/0	12K8	14/0	30PL13	12/6	DAF96	8/6	ECC82	6/6	EM81	9/0	N339	15/0	RG1-240A		UBF89	9/6	X79	21/3
3V4	7/6	6F12	4/6	7B7	8/6	12Q7GT	5/0	33A/158M		DF66	15/0	ECC83	7/6	EN31	37/0	P61	3/6		45/0	UC92	9/0	XD(1.5)	6/6
5R4GY	17/6	6F13	11/6	7C5	8/0	12SA7	8/6	DF70	15/0	ECC84	9/0	EY51	9/0	P220	10/6	RK34	7/6	UCH42	9/6	XFG1	18/0
5U4G	6/6	6G6	6/6	7C6	8/0	12SC7	8/6	DF91	4/6	ECC85	8/6	EY86	9/0	PCC84	8/0	S130	15/0	UCH81	9/6	XFY12	9/6
5V4G	10/0	6H6GT	3/0	7D6	10/6	12SG7	7/0	DF96	8/6	ECC88	18/0	EZ35	6/0	PCC85	9/6	SP4(7)	14/6	UCL82	11/6	XFY34	17/6
5Y3GT	6/6	6J5G	5/0	7H7	8/0	12SH7	8/6	DH63(C)	6/6	ECF80	10/6	EZ40	7/0	PCC88	18/0	SP41	3/6	UCL83	19/3	XH(1.5)	6/6
5Z3	12/6	6J6	5/6	7R7	12/6	12SJ7	8/6	DH76	5/0	ECF82	10/6	EZ41	7/0	PCC89	11/6	SP42	12/6	UF41	9/0	Y63	7/6
5Z4G	9/0	6J7G	6/0	7S7	9/6	12SK7	6/0	DH77	7/0	ECH35	6/6	EZ80	7/0	PCF80	8/0	SP61	3/6	UF42	12/6	Z63	7/6
6A7	10/6	6K7G	5/0	7V7	8/6	12SQ7	11/6	35Z5GT	9/0	DK40	21/3	ECH42	9/0	EZ81	7/0	PCF82	10/6	UF80	10/6	Z66	17/6
6A8G	9/0	6K8G	6/6	7Y4	7/6	12SR7	8/6	41MTL	8/0	DK91	6/6	ECH81	9/0	FW4/800	8/6	PCF86	15/0	UF85	9/0	Z77	4/6
								43	10/0	DK92	9/0	ECL80	9/0	GZ30	9/0								
								50C5	10/0	DK96	8/6	ECL82	10/6	GZ32	10/0								
								50L6GT	9/6	DL33	9/6	EF22	14/0	GZ34	14/0								
								72	4/6	DL66	17/6	EF36	4/0	H63	12/6								
								77	8/0	DL68	15/0	EF37A	8/0	HL2	7/6								

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EXCHANGE AND MART SECTION

ADVERTISEMENT RATES. Members' Private Advertisements 3d. per word, minimum charge **5s. Trade Advertisements 9d. per word,** minimum charge **12s.** All capitals **1s.** per word, minimum charge **18s.** Write clearly. No responsibility accepted for errors. Use of Box number **1s. 6d.** extra. Send copy and remittance to **Sawell & Sons Ltd., 4 Ludgate Circus, London, E.C.4, by 22nd** of month preceding date of issue.

ALL TYPES OF VALVES REQUIRED for cash. State quantity and condition.—Radio Facilities Ltd., 38 Chalcot Road, N.W.1. (PRImrose 9090.)

ANY OFFERS ACCEPTED or would swap for photographic equipment the following BC 639 with signal generator 100-156 Mc/s. S.W. magazines, 1952-59. APRL handbooks, 1941, 1946, 1948. Radio Handbook 1946. 6-6AG7, crystals, valves, components, C.R. tubes, etc. to callers.—Kimber, Creech St. Michael, Taunton.

FOR SALE "R.S.G.B. Amateur Radio Handbook" 2nd Edition. Published 1946. 25/-. Also "Bulls" May 1950 to May 1960 (3 missing) 70/-. Two superb books by Editors and Engineers, California: "Radio Handbook" 11th Edition 1947. 300 large pages packed with information 30/-. "Radio Amateur Newcomer" 10/-. All items as new. Sent post free. James Littlejohn, Shanzie, Alyth, Perthshire.

FOR SALE TSL BAND 2 FM Tuner, Amplifier and Goodmans 12 in. Speaker, C/W Tweeter and Crossover Network (in cabinet). All as new, cost £35, will accept £15. KW LP Filter New 10/-. G3LSW, 7 Masefield Close, Cheadle, Stoke-on-Trent, Staffs.

GOING QRT—CHANGING QTH. 150 watt 22-valve relay controlled luxury tx with self contained electronic keyer, Antennamatch, ATU, etc. Demonstration by appointment in Surrey, £60 (less than half components value) for quick sale, or part exchange early Empire stamp collection, Full details and photo. Box No. 239, R.S.G.B. Bulletin, 4 Ludgate Circus, London, E.C.4.

IDEAL SWL RECEIVER Hallicrafter SX 24 (1·7-42mc/s) in good condition with matching speaker manual. £12. Carriage extra. Box No. 241, R.S.G.B. Bulletin, 4 Ludgate Circus, London, E.C.4.

KNEEHOLE CORNER WRITING DESK, oak, bookshelves, ideal TX console, £9/10/-. Commercial lab. type audio oscillator, rack mounting, £7/10/-. R.f. signal generator, V.f.o. crystal control, £3/10/-.—Turner, 18 Seer Mead, Seer Green, Bucks.

MINIMITTER 1958, little used, offers.—G6MH, 27 Thurston Avenue, Southend-on-Sea.

MINIMITTER 150 WATTS. Transmitter 80-10 meters, £45 o.n.o. R107 receiver, £8 o.n.o. Minimitter Beam Rotator and Indicator Unit, £12 o.n.o. All in perfect working order. Buyer collects.—Speedwell 9186. H. A. Meyers, 19 Norrice Lea, London, N.2.

MONITOR 101. 3½ in. oscilloscope and 230 volt P/U. Calibrated T/B. 1μS to 20mS. 1μS delay line, X expansion. Calibrated Y/amp and attenuator. Low/C input probe. C/core transformers. Circuit 5/6CH6, 5/6AM6, 2/12AT7, 2/6AL5, 6BR7, 6BW6, 2/5U4, CV1120, CV1587, £16.—G2BMS, 138 Westwood Avenue, Brentwood.

PANDA PR-120-V. In excellent condition £55. International rack mounting power packs (2) giving 1,500/1,250v at 250mA with half power primary switching GU50's ample smoothing, swinging chokes, HT voltmeter. Also 450v supply with separate bias unit. All 240v AC input. Built to professional standards, the two £7 10s. 0d. Buyer collects. BC 221 built into TU5B cabinet with monitor speaker and stabilised power pack, ham band calibration chart. In first class condition, £15. Corbett, 17 Tudor Avenue, Bebington, Cheshire.

QSL CARDS. G.P.O. approved log books, cheapest, best, prompt delivery. Samples.—Atkinson Bros., Printers, Looe, Cornwall.

SALE—CR 100 £20. Very good condition Truvox Tape Deck £7. G.E.C. Crystal Calibrator £5. 120 watt TX Five Band £8.—G3LBG, 84 Havering Gardens, Chadwell Heath, Essex.

(Continued on next page)

EXCHANGE & MART (contd.)

QQV03-20A AND QQV06-40A will exchange for pair of 6146s plus £1 or sell 35s. and 40s. each.—GM3FDW, 36 Shawhill Road, Annan, Dumfriesshire.

SIDEBANDERS. You are invited to join the " Single Sideband Amateur Radio Association." Official publication " The Sidebander " issued to members. Annual fees 83 or 24/-. Application forms and sample copies available from British representative Ted Hayes—G3KHE, 19 Monmouth Drive, Sutton Coldfield, Warwickshire.

813 TRANSMITTER FOR 80, 40, 20, 15 and 10, built on modern lines with Labgear wide band couplers, high level modulator and full power supplies. TVI proofed, first class components throughout. Requires separate V.F.O., £30 o.n.o. Numerous other components.—G3KKH, 90 Birchfields Road, Manchester 13.

APPOINTMENTS SECTION *(Situations Vacant)*

RADIO OPERATORS.—AIR MINISTRY have vacancies for temporary Radio Operators (male). Good prospects for permanent, pensionable appointments and promotion. Initial appointments in U.K. but subsequent tour of duty in Far East likely. Trainees £300 (at age 16) to £635: qualified Operators £530 to £1,040. (These rates are subject to a small deduction at Provincial stations and a small increase in London and Overseas.) Applicants under 40 with morse speed 15-18 w.p.m. preferred.—Apply in writing to Air Ministry, C.E.3h, London, W.C.1, or any Employment Exchange quoting Cheadle 3.

VACANCIES EXIST IN BOREHAM WOOD for electrical Inspectors and Testers for work on high quality communication equipment. Inspectors must be able to read circuit diagrams and be acquainted with current production methods. Testers will be required to align superhetrodyne receivers and check performance of transmitters. Commencing wage 192s. 2d. in a range up to 272s. 2d. for a 42-hour, 5-day week. Re-assessment of rate after one month's service with retrospective effect from date of entry. Annual merit re-assessment. Paid sick leave scheme and prospects of permanent, non-contributory, pensionable posts. Canteen. Social and sports facilities. Box No. 240, R.S.G.B. Bulletin, 4 Ludgate Circus, London, E.C.4.

VACANCIES EXIST IN A GOVERNMENT Department at Boreham Wood, Herts., for assemblers and wiremen of radio equipment. Previous career experience is not essential and amateurs would be considered for training. Industrial Civil Service status, embracing superior paid leave, non-contributory sick scheme, and other advantageous conditions. Rate of pay 192s. 2d. to 242s. 2d. according to individual merit. Permanent pensionable posts after qualifying period. Box No. 242, R.S.G.B. Bulletin, 4 Ludgate Circus, London, E.C.4.

PLEASE MENTION THE BULLETIN WHEN WRITING TO ADVERTISERS

MECHANICAL FILTERS

G3FYS has been fortunate in obtaining a number of Mechanical Filters which should arrive in this country early in December. The Filters are suitable for incorporation very simply into existing equipment including sideband generators. They are without doubt the best Filters we have had the opportunity of trying and unlike most other types of Mechanical Filter the insertion loss of these Filters, in the pass band, is very low. One of these filters will bring the performance of amateur built gear up to the standard of the most expensive commercial products.

Brief Specifications are as follows:
Type " A " Bandwidth 0.5 kc/s. (3db) Centred on 455 kc/s.
Type " B " Bandwidth 5.0 kc/s. (3db) Centred on 455 kc/s.
Type " C " Bandwidth 2.4 kc/s. (3db) To pass upper sideband on 455 kc/s.
Input and Output Impedance of all filters is 5 Kohm.
Response outside pass band is in all cases at least −60db.
Insertion loss of the filter is in all cases less than 6db.
Each filter is supplied with a curve showing characteristics.

The cost of the filter has been kept as low as possible and we are able to offer them at £15 3s. 0d. each amateur nett.

Orders will be dealt with in strict rotation as received and we will do our best to meet everyone's requirements.

G3FYS, Raven Cottage, Raven Way, Mudeford, Christchurch, HANTS.

INDEX TO ADVERTISERS

Radio Society of Great Britain

NEW RUSKIN HOUSE, LITTLE RUSSELL STREET, LONDON, W.C.I

REPORT OF THE HONORARY TREASURER

IT is my pleasure to submit the Balance Sheet of the Society at 30th June, 1960, and the Income and Expenditure Account for the year to the same date.

The Income and Expenditure Account shows a surplus of £119 compared with a surplus last year of £1,025. The main reason for the decrease in the surplus is the increase in the cost of printing the R.S.G.B. BULLETIN about which I warned members last year.

I would also call the attention of members to the charge for sending delegates to the Administrative Radio Conference, at Geneva. The previous conference took place 12 years earlier and when the Society was invited by the General Post Office to appoint a delegate to join the official U.K. delegation to advise on Amateur Radio matters, the Council decided that this opportunity to look after the interests of members must be taken at any cost.

I should like to refer to the increasing profit on the sales of publications. This is due in no small measure to the excellent work of the voluntary helpers on the Society's stands at the National Radio Show and Radio Hobbies Exhibition.

I am glad to report that the amount received from subscriptions is still increasing, but if subscription rates are not to be raised, this increase must be maintained by the continued introduction of new members and the retention of present members. I must, however, comment that some members consider the rate of the subscription now paid by Associates should at least be increased to cover the increased cost of producing the BULLETIN which journal they receive each month, similarly to all other members.

It is also still essential that the amount of revenue received from advertising in all the Society's publications shall be maintained; I should again like to stress the utmost importance of informing advertisers when goods are purchased as the result of announcements in R.S.G.B. publications.

I shall do my utmost while I am in office to keep a surplus on the Income and Expenditure Account but as members must realise with increasing costs it will be very difficult.

I shall report generally on the Accounts at the Annual General Meeting. In the meantime it would prove very helpful if members could put any questions to me in writing before the Meeting so that full answers can be given.

NORMAN CAWS, F.C.A.,
Honorary Treasurer

RADIO SOCIETY OF GREAT BRITAIN

(COMPANY LIMITED BY GUARANTEE)

New Ruskin House, Little Russell Street, London, W.C.1

INCOME AND EXPENDITURE ACCOUNT

for the year ended 30th June, 1960

1959 £	£	£		£	£	£
			INCOME			
		13,210	Subscriptions (including proportion of Life Members' Subscriptions)			13,976
		1,257	Profit on Sales of Publications, etc.			1,521
		537	Interest on Investments (Gross Amount before deduction of Income Tax)			633
		15,004	**Total Income**			16,130
			EXPENDITURE			
759			Rent, General and Water Rates, Cleaning, Lighting and Heating		751	
4,563			Salaries, National Insurances and Staff Pension Premiums		4,602	
93			Telephone		98	
423			General Postages		422	
423			Printing and Stationery		536	
125			Staff Luncheon Vouchers		125	
63			Insurances		66	
100			Bank Charges		100	
26			Repairs and Maintenance		61	
68			Legal Expenses		41	
105			Audit Fee		105	
130			Sundry Expenses		102	
98			Purchases of Equipment written off		164	
57			Membership Certificates and Badges		93	
93			Awards and Trophies and Contests		200	
19			Films and Tape-recorded Lectures		28	
463			Cost of QSL Bureau		496	
99			Contribution to I.A.R.U. Region 1 Division (Note 2)		198	
16			Cost of Society's Contribution to the work of the International Geophysical Year		9	
86			Annual General Meeting (Cost of Printing and Hire of Hall)		91	
234			Net cost of Exhibitions, etc. (Note 1)		229	
			Bulletin distributed free to Members—			
8,759			Printing, Postages, etc.	9,455		
4,071			*Less* Receipts from Advertising	3,806		
	4,688				5,649	
			Travelling, Entertainment and Meetings—			
192			Council and Committee Meetings	172		
401			Council Members' Expenses	627		
199			Regional and Club Meetings	200		
240			I.A.R.U. Conference (Bad Godesberg)	—		
—			" " (Folkestone)	247		
—			" " (V.H.F.)	25		
49			R.A.E.N. Committee Meetings	32		
23			R.A.E.N. General	62		
20			Representatives' Expenses	9		
49			London Lectures	35		
75			Sundries	74		
—			Administrative Radio Conference, Geneva, 1959	354		
—			National Convention—Cambridge	8		
—	1,248				1,845	
		13,979	**Total Expenditure**			16,011
		£1,025	**SURPLUS OF INCOME OVER EXPENDITURE FOR YEAR ENDED 30th JUNE, 1960**			£119

BALANCE SHEET 30th June, 1960

1959 £	£	£		£	£	£
			CURRENT ASSETS			
2,186			Cash at Bank and in Hand		3,171	
720			Debtors		853	
314			Payments in advance (including £837 in connection with the Society's Handbook)		1,079	
479			Stock of Publications, etc. (as certified by the General Secretary)		850	
67			Income Tax recoverable		85	
	3,766					6,038
			FIXED ASSETS			
			Investments at cost			
14,795			Quoted (Note 3)	14,795		
			Middle Market Value £12,004 (1959 = £12,667)			
1,000			4 per cent. Defence Bonds	1,000		
2,000			5 per cent. Defence Bonds	2,000		
	17,795				17,795	
			Furniture and Equipment			
1			Net Book Value at 1st October 1947	1		
570			Additions (at Cost)	734		
571				735		
570			*Less* Amounts written off	734		
	1				1	
		17,796				17,796
		£21,562	**Total Assets**			£23,834
			BEVAN SWIFT MEMORIAL FUND			
106			Balance at 1st July 1959		101	
5			*Less* Prize Awarded		6	
	101					95
	50		**LIFE MEMBERS' SUBSCRIPTIONS RESERVE ACCOUNT**			80
			CURRENT LIABILITIES (Note 4)			
2,206			Sundry Creditors and Accrued Expenses		4,072	
7,417			Subscriptions in advance		7,821	
	9,623					11,893
	9,774		**Total Liabilities**			12,068
			ACCUMULATED FUND			
10,896			Balance at 1st July 1959		11,788	
1,025			Surplus of Income over Expenditure for the year ended 30th June 1960	119		
133			*Less* Income Tax in respect thereof	141		
	892				22 (minus)	
	11,788				11,766	
	£21,562				£23,834	

W. R. METCALFE *President.* NORMAN CAWS *Honorary Treasurer.* JOHN CLARRICOATS *General Secretary.*

REPORT OF THE AUDITORS TO THE MEMBERS OF RADIO SOCIETY OF GREAT BRITAIN

We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit. In our opinion proper Books of Account have been kept by the Society so far as appears from our examination of those Books. We have examined the above Balance Sheet and Income and Expenditure Account, which are in agreement with the Books of Account. In our opinion and to the best of our information and according to the explanations given us, the said Accounts in conjunction with the notes annexed hereto give the information required by the Companies Act, 1948, in the manner so required, and the Balance Sheet gives a true and fair view of the state of the Society's affairs as at 30th June, 1960, and the Income and Expenditure Account gives a true and fair view of the surplus of Income over Expenditure for the year ended on that date.

Thames House Queen Street Place London, E.C.4.
12th October, 1960.

EDWARD MOORE & SONS
Chartered Accountants.

NOTES

(1) **Net Cost of Exhibitions, etc.**

Held in 1958		*Held in 1959*
£		£
214	National Radio Show	213
20	Radio Hobbies Exhibition	16
£234		£229

During the year folding counters were purchased for use at the Society's Exhibitions, etc., and the cost of £76 has been written off in the item of £164 in the Income and Expenditure Account. As a result no charge for Counters has been included in the amount of £16 net cost of the Radio Hobbies Exhibition.

National Radio Show	Radio Hobbies Exhibition		National Radio Show	Radio Hobbies Exhibition
£	£		£	£
170	219	Profit on Sales of Publications, etc. ..	164	297
85	84	Subscriptions of New Members enrolled	59	127
£255	£303		£223	£424

(2) The amount of £99 is the contribution for the half year to 30th June, 1959, the previous half year having been charged in the 1958 accounts. The current charge of £198 is for the year to 30th June, 1960.

(3) **Investments**

Middle Value at 30th June 1959		Middle value at 30th June 1960	Cost Price
£		£	£
3,660	£4,000 3 per cent. Savings Bonds 1955/65	3,580	4,021
3,875	£5,000 3 per cent. Savings Bonds 1956/75	3,600	5,219
3,573	£4,154 1s. 6d. British Transport 4 per cent. Guaranteed Stock 1972/77	3,344	4,055
1,559	£1,751, 9s. 6d. 3½ per cent. Conversion Loan 1969 ..	1,480	1,500
£12,667		£12,004	£14,795

(4) There are liabilities for work carried out and materials, etc., provided in respect of the Society's Handbook which have not been brought into these accounts. The total amount is estimated at £1,000.

THE PILOT OFFICER NORMAN KEITH ADAMS PRIZE TRUST FUND

BALANCE SHEET 30th JUNE, 1960

	£ s. d.		£ s. d.
TRUST FUND	150 0 0	**INVESTMENT**	
ACCUMULATED FUND		£150 3½ per cent. Defence Bonds ..	150 0 0
Balance at 1st July, 1959 ..	15 15 0		
		CASH AT BANK	15 15 0
	£165 15 0		£165 15 0

INCOME AND EXPENDITURE ACCOUNT for the year ended 30th June, 1960

	£ s. d.		£ s. d.
Prize Awarded	5 5 0	Interest on Investment for the year ..	5 5 0
	£5 5 0		£5 5 0

W. R. METCALFE *President.* NORMAN CAWS *Honorary Treasurer.* JOHN CLARRICOATS *General Secretary.*

REPORT OF THE AUDITORS

We have audited the Balance Sheet and Income and Expenditure Account as set forth above and have obtained all the information and explanations we have required. In our opinion such Balance Sheet and Income and Expenditure Account are properly drawn up so as to exhibit a true and correct view of the state of affairs of the Prize Trust Fund as at 30th June, 1960, according to the best of the information and explanations given to us.

Thames House, Queen Street Place, London, E.C.4.
12th October, 1960.

EDWARD MOORE & SONS
Chartered Accountants.

Printed in Great Britain for the RADIO SOCIETY OF GREAT BRITAIN, New Ruskin House, Little Russell Street, London, W.C.1 by Loxley Brothers Limited, Letchworth, Hertfordshire.

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