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R.S.G.B. BULLETIN

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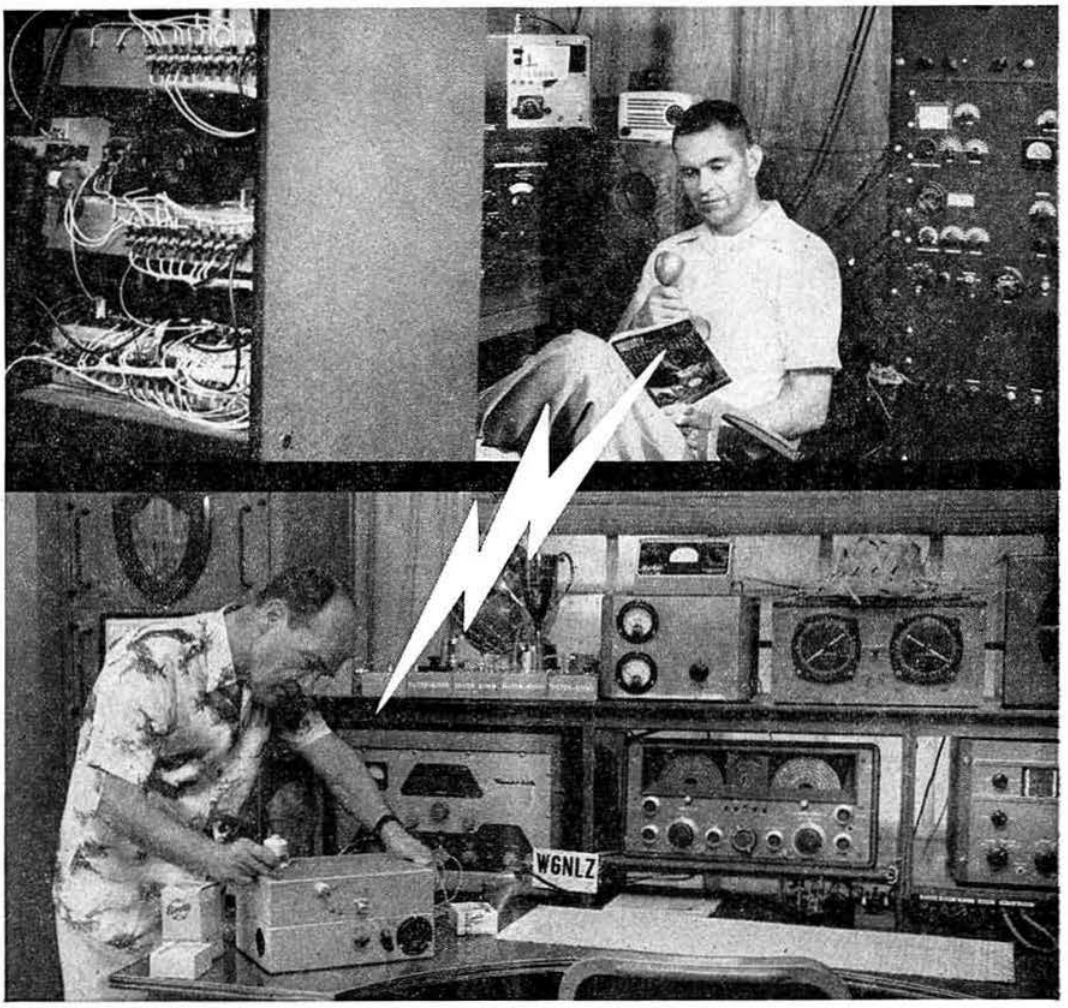

2540 MILES AT 220 MEGACYCLES — EIMAC TUBES HELP SET NEW DX RECORD

John Chambers, W6NLZ, and Ralph Thomas, KH6UK,have done it again. On June 22, 1959, they set a new ARRL 220 megacycle DX record of 2540 miles between California and Hawaii. Contact was established at 10:10 p.m. Pacific Standard Time and maintained until 11 p.m. The contact was repeated the same day and again on June 30. In 1957, Ralph and John set a two meter record over the same distance with Eimac-powered rigs.

Exceptional performance by Eimac tubes helped set this new record. KH6UK in Hawaii operated a pair of Eimac ceramic 4CX300A's in push-pull in his final amplifier, driven by a pair of Eimac 4X150A's. The final operated at 800 watts input—400 MA at 2,000 volts. KH6UK reports his Eimac tubes "just loafed along and input could have been increased to a full kilowatt with ease!"

W6NLZ in California operated both CW and sideband, using a pair of Eimac ceramic 4CX250B's in push-pull.

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For complete information on Eimac tubes write our Amateur Application Department.

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Current Comment

discusses topics of the day

Operation Steam Roller

MEMBERS who operate on 14 Mc/s, particularly those using s.s.b., will already know, to their cost, that the American phone band was extended by 50 kc/s up to 14,350 kc/s on March 10, 1960. Repercussions have been swift—s.s.b. stations in other countries are being forced out of this segment in which they have operated for many years by the appearance of high power U.S. phone stations.

The long-term results of the new arrangement are already becoming pretty clear—all non-U.S. operation will have to take place between 14,000 and 14,200 kc/s, with c.w. stations occupying the first half of the segment, leaving just 100 kc/s for phone stations. However, even this part of the band will of course be shared with U.S. c.w. stations.

What is particularly galling is the manner in which the changes came about. The American Radio Relay League, as the national society for U.S.A., petitioned the Federal Communications Commission for increased space for phone operation on 14 Mc/s, ending with the extraordinary comment " the demonstrated need of U.S. amateurs for additional radio telephony space at 14 Mc/s is the paramount factor." Apparently the interests of other amateurs are of no consequence whatsoever. Certainly the R.S.G.B.'s views, conveyed to the League as headquarters society of the International Amateur Radio Union as soon as the proposal was mooted in 1959, went unheeded and indeed even unanswered.

On the face of it, the changes are entirely a domestic matter for U.S. Amateur Radio: there would of course be no case for American amateurs being subject to special restrictions such as compulsory band planning if they operated on an equal footing with most of the rest of the world. But the plain fact is that they do not. Particularly is this so in relation to power. It would certainly have made the pill a little easier to swallow if at the time the A.R.R.L. had made its request for the extension of the phone band it had also asked for some form of power limitation more in keeping with international Amateur Radio than international broadcasting. As it is, the way this matter of world wide importance has been handled bears the stamp of " steam rollering " in complete disregard of amateurs in other countries. Canadian amateurs are particularly incensed by the changes and are in fact petitioning their licensing authority (the Department of Transport) to give them the same general phone bands as those in other Commonwealth countries.

As our own contribution to finding some positive solution to the difficulties caused by the American action, we publish elsewhere in this issue a plea by a member suggesting that non-U.S. s.s.b. stations should in future congregate in the segment 14,100 to 14,125 kc/s. The suggestion is commended to members because it is clearly desirable for s.s.b. and conventional a.m. stations to avoid one another in so far as is possible.

D/F Contests

IN a letter to the Editor published last month the Chairman of the Society's Contest Committee, Mr. R. C. Hills (G3HRH), drew attention to the well-established programme of area Direction Finding events leading up to the D/F National Final in September. Recently this programme has taken the form of about four qualifying events in more or less the same parts of England. In fact, based on the pattern of this programme during the past few years, it might be fairly concluded that interest in D/F events is confined to a central part of the country extending from High Wycombe in the south to Manchester in the north. Yet, as Mr. Hills stated in his letter, interest in Direction Finding (spurred on perhaps by the spate of piracy in our bands) is now widespread. For that reason alone more local contests should be possible. With that thought in mind we are tempted to ask whether any group or club is willing to organize a qualifying event for the benefit and instruction of those living in the southern counties of England? Other areas where it might be possible to gain sufficient support to warrant the organization of qualifying events are the North-East of England, Scotland, Northern Ireland, South Wales and the West Country. If the D/F Final had representatives from all these areas then it would indeed be National.

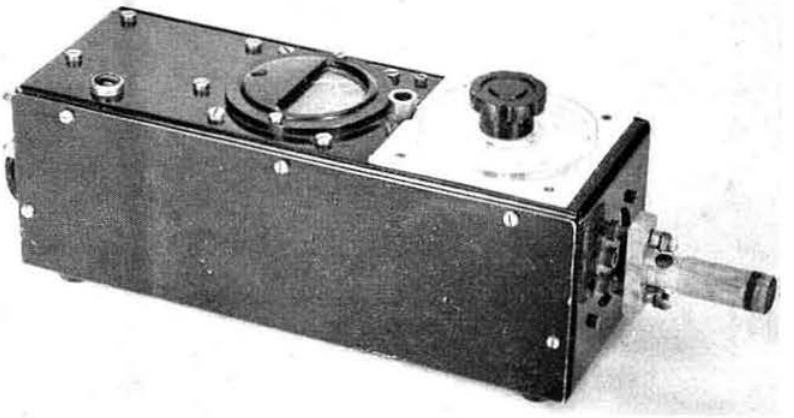
Anyone who has ever taken part in a Direction Finding contest will not need reminding of the particular blend of interest, excitement and good fellowship it engenders. First there is the pre-contest planning and construction of simple but effective gear and the general brushing up of map-reading knowledge. On the day and at the appointed time the hidden transmitter comes on the air; first bearings are taken, and at the drop of the starter's flag the competitors are off. Subsequent stops will, with a modicum of luck and sound judgment, lead to a fair indication of the general location of the transmitter. When in the vicinity of the hidden station, other problems arise (due to the very strength of the signal) and in overcoming them and finally running the operators to ground lies one of the most fascinating aspects of D/F work. When it is all over the participants gather for tea at some pleasant restaurant or hostelry where the inevitable inquest on the afternoon's happenings takes place and ideas are picked up for improve-

(*Continued on page 461*)

A Versatile Grid Dip Oscillator

Designed by G. C. FOX, A.M.I.E.E. (G3AEX)*

and described by B. PAGE (G3LMP)†



The complete g.d.o. in its case.

ALTHOUGH a simple piece of apparatus the grid dip oscillator is an invaluable adjunct to any amateur's equipment whether he be primarily concerned with transmitting, listening or construction. The model to be described in the present article was originally designed and constructed by G3AEX some years ago. Since then, its value has been proved on innumerable occasions. With its wide frequency range (400 kc/s to 195 Mc/s), it may be used as a straightforward g.d.o., absorption wavemeter, signal monitor or simple signal generator.

Circuit

The basic circuit (Fig. 1) of the g.d.o. is very simple. On ranges above 1·5 Mc/s, triode V1 functions as a Colpitts oscillator: when this is coupled to an external circuit of the same frequency, some of the energy is absorbed and there is a sharp fall in grid current. The calibration of the grid meter scale is immaterial as no actual readings are required, the meter merely showing that a *change* in current has occurred. Below 1·5 Mc/s, the high LC ratio at the high end of each range would tend to cause unstable oscillation. L1 and L2 are therefore tapped to change the circuit to that of a Hartley oscillator. In the prototype, both coils were tapped at the centre; if it is found that the amplitude of oscillation is too high the tap may be moved nearer the grid end of the coils.

When the oscillator is used as a signal generator, audio voltages can be injected at socket J1, in series with the meter, to provide a modulated test signal, the modulation frequency being entirely dependent on that of the a.f. source. The same jack is used as the headphone connector when the instrument is employed as an absorption wavemeter or monitor, or as a reacting detector for the identification of spurious signals, etc.

The power supplies for the oscillator are derived from a conventional full-wave rectifier arrangement. The valve used, however, is a type 6AL5 which is quite capable of passing the current required, yet small enough to permit the complete power unit to be fitted inside the oscillator case. H.T. is controlled by switch S2 which connects the centre tap of the transformer secondary to earth.

* *Member of the Technical Development Sub-Committee, 66 Homemead Road, Bromley, Kent.*

† *Member of T.D.S.C. Panel of Writers, 7 Queen's Gardens, Eaton Socon, Hunts.*

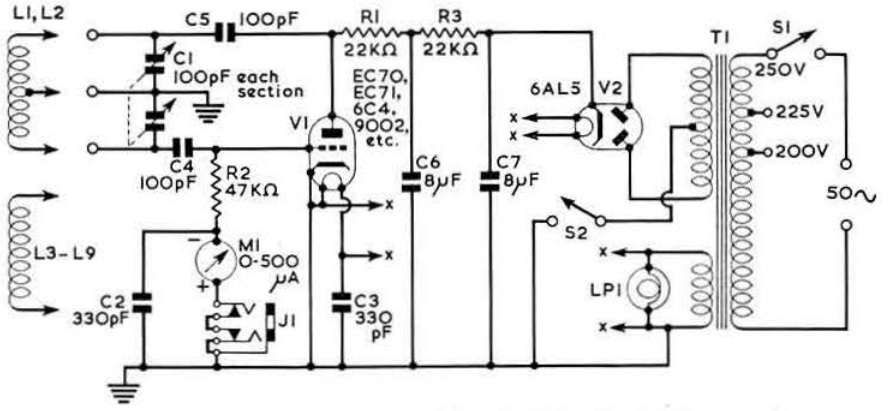


Fig. 1. Circuit arrangement of the g.d.o. designed by G3AEX.

C1, twin gang 100 pF max. per section (Wingrove and Rogers type C28-142).
C2, 3, 330 pF Hi-K ceramic bead. (T.C.C. type S.P.G.1).
C4, 5, 100 pF ± 10 per cent silvered mica (L.E.M.C.O. type 1510).
C6, 7, 8 μF 200 volt wkg. (T.C.C. type CE18G).
J1, closed circuit jack.
LP1, 6·3 volt 0.05 amp. M.E.S. bulb.
M1, 0-500 μA f.s.d. moving coil meter.
R1, 3, 22K ohms ± 10 per cent 1 watt.
R2, 47K ohms ± 10 per cent ½ watt.
S1, 2, s.p.s.t. toggle switches.
T1, 125-0-125 volt, 55 mA, 6.3 volt 0.5 amp. (Parmeko type C3111).
V1, EC70, EC71, 6C4, 9002, etc. (see text).
V2, 6AL5 (Brimar).

Construction

As can be seen from the photographs, the complete instrument, including power supply and indicating meter, fits into a convenient probelike case measuring 9 in. × 3 in. × 3 in. This case is made in two parts: the front panel and ends are shaped from a 3¾ in. strip of 16 s.w.g. aluminium, and the three remaining sides from a single sheet of the same material. A ⅜ in. lip is left around each edge of the first piece to provide a base to which the sides can be screwed when the instrument is complete.

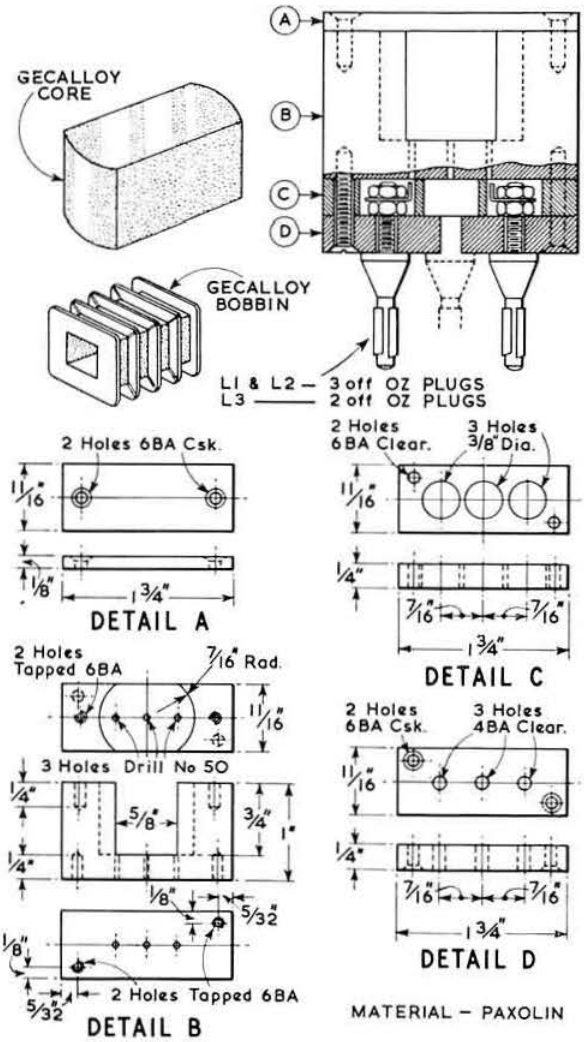
The Parmeko Type C3111 mains transformer, occupying a cube with approximately 2½ in. sides, is mounted at one end of the case. (Should a transformer other than that specified

be used, it may be necessary to modify the case slightly to accommodate it.) On the end wall next to the transformer are the a.c. and h.t. toggle switches and a small grommeted hole for the mains input lead. Next to the transformer comes the 500 μA indicating meter. Using an average meter of not more than about 1½ in. depth, there is sufficient room to mount the power unit components behind it. A paxolin panel is used to support the resistors and capacitors, while a small aluminium bracket holds the horizontally-mounted rectifier valve.

On the opposite end wall of the case, a 1½ in. diameter hole is cut for the coil holder. This is a 2 in. square of Perspex with three 3mm sockets (Belling & Lee type L1317) mounted across the middle at $\frac{7}{16}$ in. centres. The holder is fitted over the inside of the hole and held in place by an 8 B.A. nut and bolt in each corner. The tuning capacitor (C1) should be mounted as close as possible to the coil socket, connections between the two being in wire of at least 16 s.w.g. Although not absolutely necessary, a slow motion drive fitted to the capacitor helps to make tuning a little easier.

In the space between C1 and M1 are fitted the closed-circuit jack and, on a small paxolin strip, the remainder of the oscillator components. In the prototype, V1 is a type EC70, but an EC71—a successor having a slightly higher slope—can be directly substituted. Both are subminiature types with flying-lead bases and may be supported in a padded aluminium bracket fixed to the side of C1. If it is intended to use a 6C4 or similar plug-in valve it will be necessary to make some mechanical changes to the layout to allow for their larger size and to accommodate a suitable low-loss valveholder.

Coil construction is shown in Fig. 2. The holders are, of course, not critical except for plug spacing—considerable "constructor's licence" can be exercised. The cores and formers for L1, L2 and L3 were supplied by Salford Electrical Instruments Ltd., but similar types have appeared on the surplus market from time to time. After the bobbins have been wound they should be mounted in a $\frac{5}{8}$ in. × 1 in. × 1½ in. U-shaped paxolin block; the open end of the U is then closed by a small strip of paxolin, thus retaining both bobbin and core in position. For L1 and L2 connection to the oscillator is by means of three 3mm Belling & Lee type OZ plugs mounted on a small paxolin strip at $\frac{7}{16}$ in. centres; L3 requires only two plugs, these being mounted at $\frac{7}{8}$ in. centres. In each case, the shanks of the plugs are cut off to a length of ¼ in. and recessed into the strip, the leads from the coil going to the appropriate plug via small holes drilled through the block. The mounting strip can then be screwed to the bottom edge of the block with 8 B.A. countersunk screws at the corners.



Calibration

Grid dip oscillators usually have one of two forms of calibration: either a set of graphs (one for each coil) or a direct-reading dial. The former method has the disadvantages that the graphs are very easily lost or mislaid and are not as quick or as easy to read as a directly calibrated dial. The latter method has therefore been adopted.

The dial itself is made from a 3 in. square of white ivorine sheet. Using Indian ink, five circles, about ¼ in. apart, are drawn around the dial; each circle is then divided into two halves, one half being used for the calibration of each coil.

On the lower-frequency ranges, calibration can be carried out with the aid of a 1000 kc/s/100 kc/s crystal calibrator and

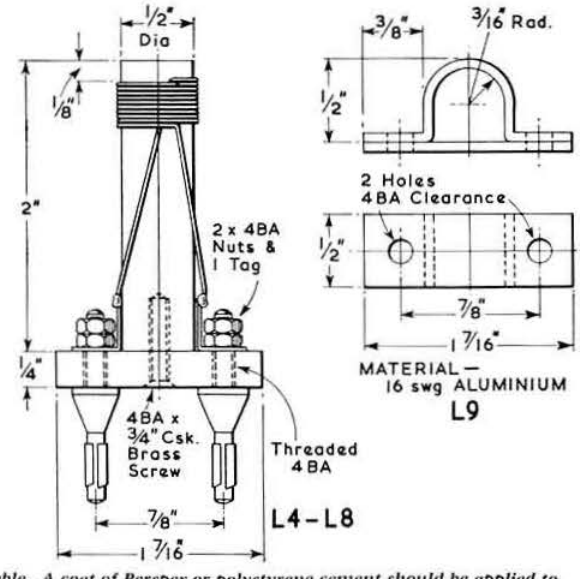


Fig. 2. Construction of the coils. Winding details are given in the Coil Table. A coat of Perspex or polystyrene cement should be applied to joining faces before they are screwed together.

a receiver. With the receiver b.f.o. switched on, C1 is adjusted for resonance at 1 Mc/s and 100 kc/s intervals throughout each range. At frequencies above 30 Mc/s, a v.h.f. signal generator should be used if at all possible. The generator output is fed into the g.d.o. by means of a one or two turn loop loosely coupled to the g.d.o. coil. By connecting a pair of headphones to J1, the beats between the g.d.o. oscillator and the generator can be identified and the g.d.o. dial marked accordingly. In the absence of a v.h.f. signal generator Lecher lines may be used.

When sufficient points have been noted, a circular piece of clear Perspex with a fine black hair-line engraved along one diameter is locked on to the capacitor tuning knob to provide a cursor. This transparent dial should be just large enough to cover the entire area of the outer-most circle; it will then give some measure of protection to the markings.

Finally, all the coils are given a liberal coat of coil cement. An alternative arrangement for L4 to L9 is to gently warm a plastic sleeve of suitable diameter and carefully slide it over the windings; when it cools, the sleeve will shrink and hold the windings in position. (In the prototype the sleeves were cut from a length of $\frac{9}{16}$ in. diameter transparent p.v.c. tubing.) Polystyrene cement is available from Woolworths.

Operational Notes

Most amateurs are now familiar with the normal method of g.d.o. operation, but for those who are about to build or use one for the first time some brief operational notes may be found useful.

Determination of the Resonant Frequency of a Tuned Circuit. The resonant frequency of a tuned circuit is found by placing the g.d.o. coil close to that of the circuit and tuning C1 for resonance. No power should be applied to the circuit under test and the coupling should be as loose as possible consistent with a reasonable dip being obtained on the indicating meter. The size of the dip is proportional to the Q of the circuit under test, a circuit having a high Q producing a more pronounced dip than one having only a low or moderate Q.

Absorption Wavemeter. By switching off the h.t. and coupling the g.d.o. in the usual manner, the instrument may be used as an absorption wavemeter. In this case power has to be applied to the circuit under test. Resonance is detected by a deflection on the g.d.o. meter due to rectified r.f. It should be noted that an absorption wavemeter will respond to harmonics if harmonic power is present and the wavemeter is tuned to the frequency of the harmonic.

Capacitance and Inductance. Obviously, if an instrument has the ability to measure the frequency of a tuned circuit, it can also be used for the determination of capacitance and inductance. To measure capacitance, a close tolerance capacitor (C_s) is first connected in parallel with a coil (any coil will do, providing it will resonate at a frequency suitable to the g.d.o.). This circuit is coupled to the oscillator and its resonant frequency (F_1 Mc/s) noted. The unknown capacitor (C_x) is then connected in place of C_s and the resonant frequency again determined. If this is now F_2 Mc/s, the unknown capacitance is given by:

$$C_x = \frac{F_1^2\ C_s}{F_2^2}\ \text{pF}$$

Similarly, inductances may be measured by connecting the unknown coil in parallel with a known capacitance and applying the formula

$$L = \frac{25{,}300}{CF^2}$$

where L is in μH, C is in pF and F is the resonant frequency expressed in Mc/s.

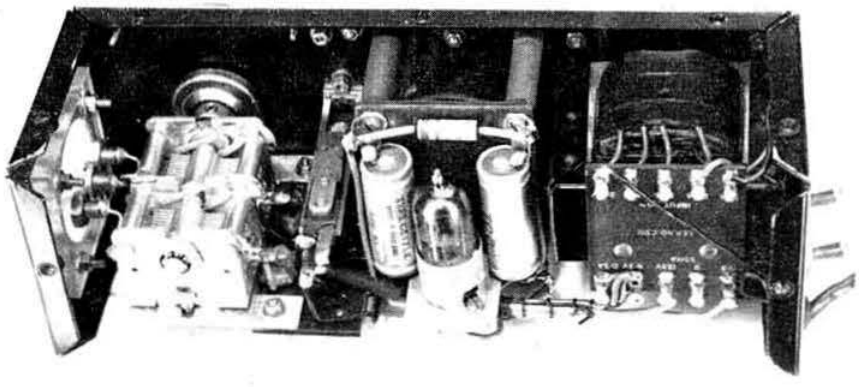
Signal Generator. For receiver testing the g.d.o. may be used to provide unmodulated c.w. signals by tuning the oscillator to the required frequency and placing it close to the aerial terminal of the receiver. The amplitude of the signal may be controlled by adjusting the distance between the g.d.o. coil and the aerial terminal.

A.f. signals can be injected at the jack socket on the g.d.o. to provide a modulated test signal, the modulation depth being dependent on the level of the modulation voltage, 5 volts being adequate. A d.c. return path must be provided for V1.

C.W. and Telephony Monitor. By connecting a pair of headphones to J1, the instrument may be used as a c.w. monitor. It should be tuned to the transmitter frequency and the distance between the oscillator and transmitter adjusted for optimum signal strength. To monitor telephony transmissions the h.t. is switched off by means of S2.

COIL TABLE

Coil	Range	Inductance	Turns
L1	400-750 kc/s	2·7 mH	305 t., 36 s.w.g. d.s.c. (see text)
L2	750-1500 kc/s	770 μH	163 t, 36 s.w.g. d.s.c. (see text)
L3	1·5-3 Mc/s	214 μH	85·5 t., 36 s.w.g. d.s.c.
L4	3-6 Mc/s	50·5 μH	120 t., 36 s.w.g. d.s.c.
L5	6-12 Mc/s	13·0 μH	40 t., 36 s.w.g. d.s.c.
L6	12-25 Mc/s	3·35 μH	14 t., 36 s.w.g. d.s.c.
L7	24-50 Mc/s	0·875 μH	6·25 t., 24 s.w.g. d.s.c.
L8	45-100 Mc/s	0·25 μH	2·25 t., 24 s.w.g. d.s.c.
L9	90-195 Mc/s	0·05 μH	See Fig. 2



The internal layout of the components in the grid dip oscillator.

Results

The instrument described has been in almost constant use for some years. During that time it has given excellent service with only an occasional check on its frequency calibration being necessary. The calibration should not alter appreciably unless some major frequency determining component is changed or the dial is shifted with respect to the tuning capacitor.

Acknowledgments

The authors wish to thank Standard Telephones and Cables Ltd. for permission to use the photographs and drawings appearing in this article.

Technical Topics

By Pat Hawker
(G3VA)

Receivers – Valve Coding – Noise Limiter for Mobile Work – Diode-integrator Detector – Crystal Oscillator – Vertical Aerials – Economical Power Supply

IT may have been just a coincidence—or it could signify the start of an important trend—that the same postal delivery brought forth the following: " It certainly appears that there is a considerable revival of interest in receiver technicalities and construction " (G2DAF, January BULLETIN) and "Judging from our correspondence during the past year, interest in home-built receivers is running high " (January *QST*). There is a sound economic basis to this revival: the amateur is beginning to demand a standard of performance (particularly for s.s.b.) that just cannot be achieved with unmodified 20-year-old designs even when these are as good as the original HRO or AR88. Modern factory-built receivers with top specifications must almost inevitably carry a price tag running into hundreds of pounds, mainly because to appeal to a large market such sets must have very great *flexibility*. They must give top performance, even when used by newcomers, on all bands for c.w., a.m.-phone or s.s.b., while sometimes high-fidelity broadcast reception is expected, each requiring basically different characteristics and bandwidths. But the home constructor can often deliberately sacrifice some facilities in which he is not particularly interested in order to simplify the design. Then he can afford, by drawing on the surplus crystal market, to fit one or more bandpass filter networks which would put many pounds on to a new rig both in prime cost and in the labour costs of alignment, etc. That old enemy of the home-constructor—the band-switching coil and tuning unit—is beginning to lose its hypnotic influence and so is the idea that the receiver should have continuous coverage from 1·8-30 Mc/s. Several recent good designs (including the HBR14, HBR16 and DCS-500 of *QST*) have used plug-in coils (and what, after all, is so wrong with them?) while other designers have got round the problem by making the receiver proper cover only one band, and then using interchangeable crystal-controlled band converters. Surely it is better to spend a moment or two changing bands than to struggle with the complexities of a switched-coil unit which may introduce considerable losses due to stray capacitances.

The latest receiver design, W1ZIF's " DCS-500 " (*QST*, February, 1960) features double-conversion but meets the now often-heard complaint that selectivity which comes too late in the receiver increases susceptibility to blocking and cross-modulation by using two cascaded 4490 kc/s first i.f. stages, each fitted with a double crystal bandpass filter before converting to 50 kc/s. To simplify tracking, only the mixer and oscillator circuits are ganged, the aerial circuit being tuned independently.

Valve and Transistor Coding

Almost unnoticed, a welcome revolution has been taking place within the British valve industry. For years we have been expected to know, for instance, that the EF91, Z77, 6F12, 6AM6, 8D3 and SP6 all contain much the same sausage under their different skins. Even where firm A has in fact been buying some of its valves from firm B, it has still insisted on relabelling them. But, in the last year or two, more and more firms have been using one or other of the two main codes for at least part of their range: the "American," and the so-called " European " code made familiar in the United Kingdom by Mullard Ltd. Mullard, G.E.C., Ediswan, Brimar and Ferranti now issue some valves in the " European " code. This code has much to commend it. For example, one knows immediately that any valve beginning EF9— has a 6·3 volt heater (E), is a voltage amplifying type (F) and has a B7G base (9). (The full code will be found in the Mullard leaflet, *Valves and Semiconductors for the Radio Amateur*).

The following is a list of some of the more common valves with "American " coding for which there are near equivalents in the " European " range. These are mostly close or even exact equivalents but characteristics should be checked before use.

5U4, GZ34; 5V4, GZ32; 5Z4, GZ30; 6A8, ECF80; 6AB4, EC92; 6AB8, ECL80; 6AJ8, ECH81; 6AK5, EF95; 6AK6, EL91; 6AL5, EB91; 6AM5, EL91; 6AM6, EF91; 6AQ5, EL90; 6AQ8, ECC85; 6AT6, EBC90; 6AU6, EF94; 6AV6, EBC91; 6BA6, EF93; 6BA7, ECH81; 6BE6, EK90; 6BJ6, EF93; 6BQ5, EL84; 6BQ7A, ECC84; 6BX6, EF80; 6BY7, EF85; 6C4, EC90; 6CB6, EF91; 6CH6, EL821; 6F6, EL33; 6H6, EB34; 6J6, ECC91; 6L6, EL37; 6N7, ECC40; 6SN7, ECC33; 6T8, EABC80; 6U8, ECF82; 6V4, EZ80; 6X4, EZ90; 6X5, EZ35; 12AT6, HBC90; 12AT7, ECC81; 12AU7, ECC82; 12AX7, ECC83; 12BA6, HF93; 12BE6, HK90.

German manufacturers have recently suggested that a similarly informative and standardized code should be used for transistors. The first letter would indicate whether germanium or silicon, *p-n-p* or *n-p-n*; the second letter would show its primary function. This seems an excellent idea.

Noise Limiter for Mobile Work

A simple circuit developed for limiting ignition noise in a broadcast car radio used with a 2m converter is described by VK3ZCN in *Amateur Radio* (March, 1959). The device places variable damping across the primary of the final i.f.t. (a somewhat similar idea is used in an early stage of many current transistor broadcast portables to improve a.g.c. action) reducing any tendency for the i.f.t. to " ring "

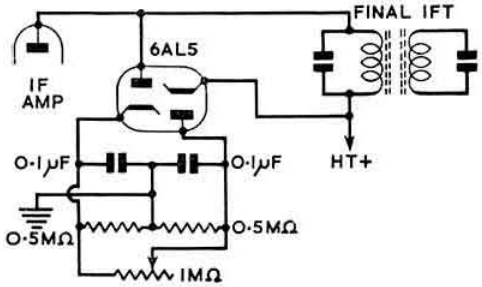


Fig. 1. VK3ZCN's noise limiter for mobile work. The degree of limiting is adjustable.

with noise pulses, as well as reducing the response of the receiver for the duration of the noise peak, particularly if the i.f.t. core also saturates. VK3ZCN claims that the system (see Fig. 1) has an effect on ignition noises " akin to magic." Since few modern car radios have much space to spare it would seem to be worth trying to adapt this circuit for germanium crystal diodes which are more compact and which would not increase the drain on the car battery.

Diode-integrator Detector

An interesting detector circuit was spotted recently in the Indian magazine *Radio Television* (December, 1959)—

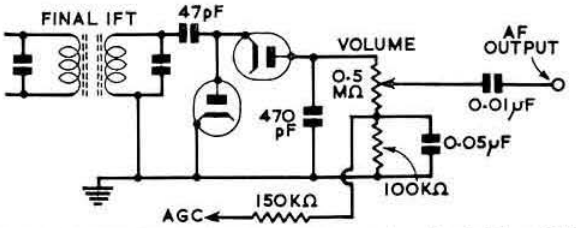


Fig. 2. Diode integrator detector. Diodes may be valve (6AL5 or 6H6) or crystal types (1N35, etc.).

previously published in *Radio Electronics*. It is claimed that it will provide an undistorted output over a much greater range of input voltages than the conventional diode circuit; is said to be capable of providing an a.f. output of up to 35 volts peak-to-peak (sufficient to drive an output stage directly) and yet to avoid the usual distortion which occurs at low signal levels. The circuit, Fig. 2, is a variation of the familiar half-wave voltage doubler; in the arrangement shown the diodes also function as the a.g.c. rectifier (normal in broadcast receivers) but it should be possible to separate these functions.

Crystal Oscillator with V.F.O. Input

It is still common practice with small transmitters to build them for crystal control but with provision for use with an external v.f.o. But it is by no means unusual to find that the c.o. stage when functioning as a buffer amplifier with the v.f.o. tends to be unstable or otherwise temperamental (this was certainly the case with the original GB1RS set up). From K8DJK via *QST* (January, 1960) comes the idea shown in Fig. 3. A low-loss switch and short crystal leads should be used.

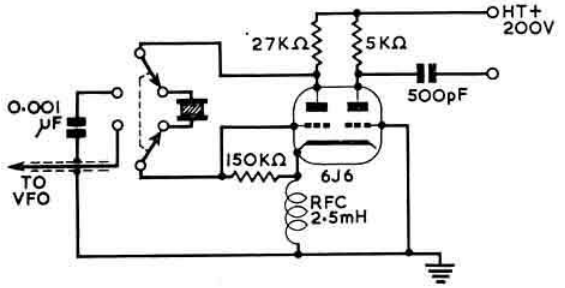


Fig. 3. K8DJK recommends this crystal oscillator/v.f.o. input stage.

Vertical Aerials

Paradoxically, the best way to improve a Top Band aerial system is to make a better earth connection. With the average short aerial providing a radiation resistance of only a few ohms, earth losses account for a substantial portion of the total power supplied to the aerial system. The earth is equally important for the multi-band vertical aerials now becoming popular on 14, 21 and 28 Mc/s. A booklet prepared by Mosley Electronics, with useful tips on installation of such aerials, was distributed at the R.S.G.B. Radio Hobbies Exhibition last November. Contrary to usual amateur practice the best place for the base of these aerials is at ground level, provided that a good network of radials is used. The B.B.C. uses up to 144 half-wave radials for some of its main medium wave stations, attached to a mesh of wires some 20 ft. square immediately under the mast, but Mosleys suggest that satisfactory results can be obtained with four radials about as long as the equivalent length of the aerial with an earth rod at the end of each radial, which can be left on the surface (the B.B.C. use mole ploughs for sinking their wires). An earth rod should also be fitted immediately under the aerial. It has been pointed out elsewhere (*Radio and Television Engineers' Reference Book*) that where a restricted earth system is used, all nearby metalwork should be connected to it. High losses can occur, for example, in fencing wires if they run close to a low vertical aerial.

W9KPD in *CQ* (November, 1959) suggests that an effective multiband vertical with a low angle of radiation and without traps consists of a $\frac{5}{8}$-wavelength long rod or wire for the highest frequency required; this length will function well on lower but not on higher frequency bands. For example, a 41·5 ft. aerial should be good on 14, 7 and 3·5 Mc/s but could not be expected to do well on 21 and 28 Mc/s. His suggested matching unit for installation at the base of the mast is shown in Fig. 4.

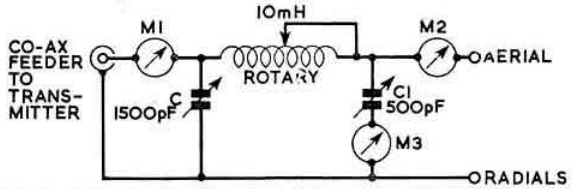


Fig. 4. W9KPD's suggested pi-coupler for matching to a 5/8 wavelength aerial. For high impedance aerial condition, C should be open, the coil adjusted and C1 tuned. For low impedance, C1 should be at minimum; tune C and the coil.

Economical Power Supply

Back in November, 1952, *QST*'s Technical Editor—W1DF—wrote on "The more effective ultilization of small power transformers" and showed how a normal receiving type 360-0-360 volt, 110 mA, transformer could be used in a bridge circuit to provide some 600-650 volts at 100-130 mA plus 220 volts at 24-50 mA. Since then his circuit has been deservedly popular but requires a separate heater transformer and space for two 6X5 and a 5V4 rectifier valves. An interesting adaption of this circuit (and incidentally a practical s.s.b. rig for 3·5-30 Mc/s) was noted in K4EEU's "A phasing type sidebander" (*QST*, November 1959). A single compact 350-0-350 volt, 160 mA transformer supplies the entire h.t. requirements of the rig, with a main h.t. rail of 700-800 volts and a lower rail of 250 volts, which in turn provides two regulated supplies of 210 and 105 volts. The key components of this circuit (Fig. 5) are CR1 and CR2, silicon rectifiers rated at 840 volts, r.m.s., 425 mA. The original design uses Sarkes Tarzian type 120SM. Silicon rectifiers are markedly more efficient than conventional metal rectifiers and have

(*Continued on page 451*)

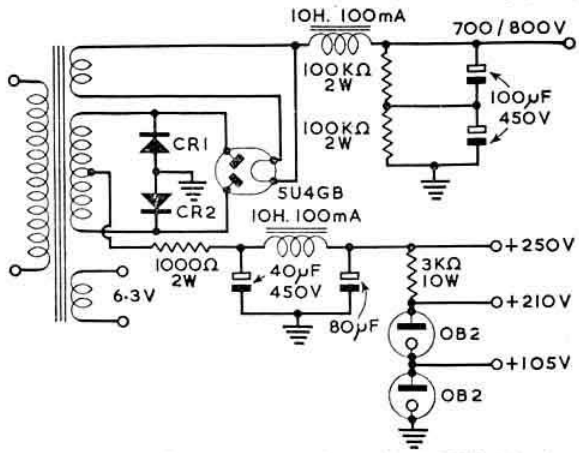


Fig. 5. "Economy" type power supply used in K4EEU's "Phasing-type Sidebander" providing all h.t. supplies from a single 360-0-360 volt transformer.

Modern Battery Technique

By C. H. L. EDWARDS, A.M.I.E.E., A.M.Brit.I.R.E., (G8TL)*

THE operation of radio equipment used by the portable and mobile amateur depends largely on the quality and reliability of the batteries which supply its power. In the past the Leclanché battery was, in many instances, of such size and weight for a given output as to make its use impractical, but as valves have decreased in size, and with transistors now in many instances replacing them, batteries have also been decreasing in size and weight and a completely new type of cell has been developed.

Mallory Mercury Battery

The mercury battery employs a new dry cell produced by Mallory Battery Co. Ltd. It is extensively used in modern hearing aids, earth satellites and transistorized equipment. It makes it possible today to have a battery no larger than a shirt button with an output of 1·34 volts 80 mA/hours. The most important characteristic of the cell may be summarized

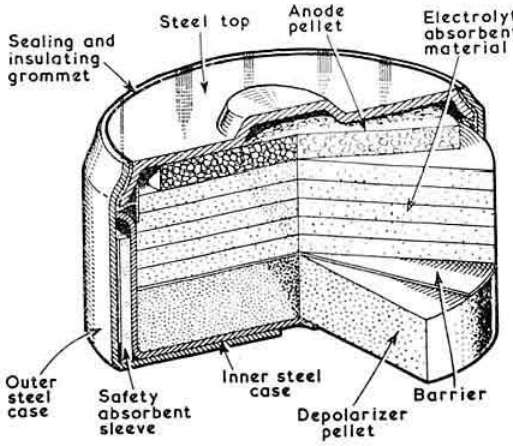


Fig. 1. Construction of the Mallory mercury cell.

as follows: high ratio of energy to volume, long shelf life (most desirable for R.A.E.N. equipment), leak-proof construction which avoids corrosion when mounted internally within the apparatus, and ability to withstand impact and acceleration effects.

The electrical energy of the Mallory cell system is produced by an electro chemical reaction between the anode and the depolarizing cathode, which is aided by the cell electrolyte. Two types of anodes are used. One is a pellet of uniform grain size which is pure amalgamated zinc powder. The other is a winding of uniformly thin corrugated zinc strip. Chemically pure mercuric oxide, to which a small amount of micronized graphite is added, forms the depolarizing cathode.

Graphite provides certain desirable physical characteristics and reduces internal cell resistance by increasing depolarizer conductivity. An electrolyte consisting of a concentrated aqueous solution of potassium oxide containing zincate is used and all cells are tightly sealed to prevent loss of electrolyte, to increase rigidity and to avoid access of air to the active material.

Fig. 1 is a typical l.t. supply unit cell. All cells have one external member, the negative terminal which is generally termed the cell top and forms part of the closure. This part must be of material electro-chemically suitable for contact with the anode in the presence of electrolyte; a tin plated inner steel top is preferred, spot welded to an outer nickel plated steel top. Steel is also most suitable for the other external cell member and is nickel plated to retard atmospheric corrosion. This part serves as the positive terminal and forms the cell case.

* 28 Morgan Crescent, Theydon Bois, Essex.

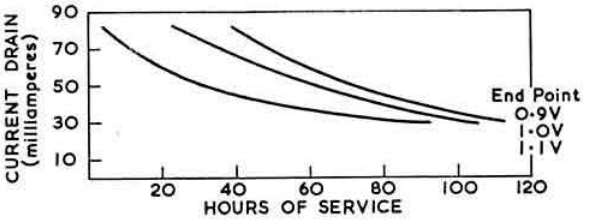


Fig. 2. Curves showing the hours of service plotted against current drain for the Mallory mercury cell.

Cell Electro Chemistry

The overall discharge reaction of this system may be written as the following equation:

$$ZN + HgO + H_2O \longrightarrow \begin{matrix} ZN(OH)_2 \\ \uparrow \quad \downarrow \\ ZNO + H_2O \end{matrix} + Hg$$

Two Faradays of electrical energy are liberated per mole of active electro material. Water is the only constituent removed from the electrolyte by reversible hydrolysis of the anodically formed zinc oxide.

The theoretical voltage of 1·345 volts for the system agrees closely with the measured value of stabilized cells. The stability of the cell is largely due to the zincate, derived from the dissolution of ZNO in KOH. The presence of the zincate ion inhibits the chemical attack of the potassium hydroxide on the zinc anode. In addition uniformity and stability is obtained by the use of constituents of a high degree of purity. Typical discharge curves obtained on the Mallory RM4 cell are shown in Figs. 2 and 3.

Until electrical energy is discharged from these cells there is no internal cell reaction due to their highly stable chemical components and passive cell case materials, hence their very long shelf life which can be numbered in years.

The Leclanché Batteries

Most amateurs are already familiar with the round torch cell and "Winner" h.t. batteries, products of the Ever Ready Co. (G.B.) Ltd. Whilst in this field no major developments have taken place in their design and construction over the past years, there has been general improvement such as longer shelf life and greater overall efficiency. There is, however, a newcomer in the power pack range which is of

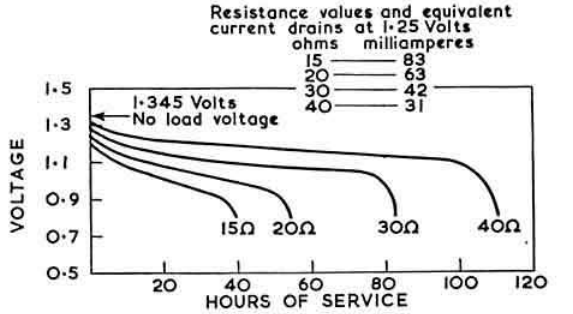


Fig. 3. Voltage discharge curves for the Mallory mercury cell (voltage plotted against time).

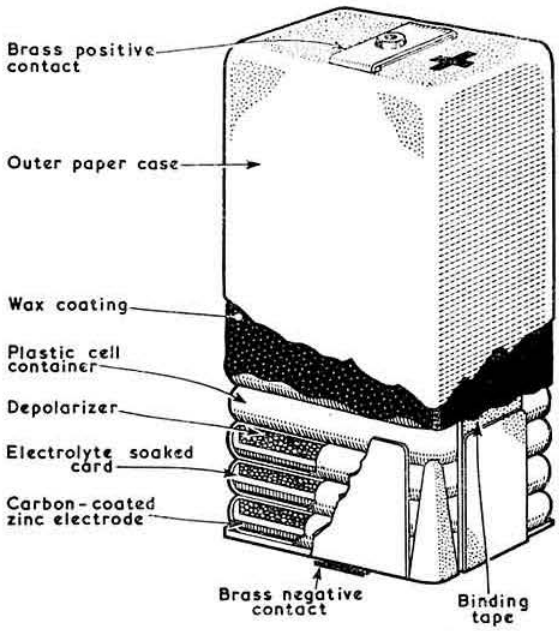


Fig. 4. Construction of the Ever Ready Batrymax layer type h.t. battery.

layer construction and marketed by the same firm as the Batrymax type. The two main reasons for introducing the layer type of battery were to provide an efficient, economical and convenient power source for a wide range of valve and transistor type equipment and also as an aid to the construction of more compact, lighter and more portable instruments. For miniature or small equipment the Batrymax construction will provide the maximum amount of power in the minimum amount of space. This applies especially where a small battery is an essential feature of the equipment, e.g., walkie talkies, etc.

The storage life of Batrymax batteries is appreciably better than that of the corresponding conventional dolly type round cell; they are also virtually leakproof, which is quite important when fitted inside radio equipment. Each power pack battery is fitted with positive action press stud connections or non-reversible sockets, or, in the case of Batrymax h.t. batteries, with either brass end contacts or sockets.

Fig. 4 shows a sectional cutaway diagram of a layer battery. As can be seen, it consists of a number of separate flat cells, dependent on the voltage of the battery required. Each cell has a positive carbon coated zinc electrode known as a duplex electrode, a zinc plate with a thin layer of highly conducting carbon fixed to it which is quite impervious to the electrolyte. The electrolyte—ammonium chloride and zinc chloride—is contained in a soaked card or paper which is porous and which also acts as a separator between the mix cake and zinc negative electrode. The depolarizer is a flat cake of mix containing manganese dioxide as the depolarizing material and carbon to render it conductive. Zinc chloride and ammonium chloride are other essential ingredients. The elements of each cell are held together by a plastic sleeve and the complete cells are then bound together by adhesive tape under the correct pressure for good electrical contact. The whole assembly is then wax coated which seals any capillary passages between the cells and so prevents electrical intercell leakage.

Battery Application

The life of a battery in an application is determined by six factors: (i) Size, (ii) Initial drain, (iii) Endpoint voltage, (iv) Hours of use per day, (v) Temperature, (vi) Storage.

The selection of the appropriate battery for a particular purpose is frequently, therefore, a matter of compromise. In receivers where portability or maximum performance in minimum space is of paramount importance, layer type batteries have decided advantages. In addition they have good storage properties and give reliable service under exacting conditions.

In transceivers, however, the layer batteries are sometimes rather less advantageous because the transmitting current exceeds the optimum for which the Batrymax type was designed. Where transmitting currents of up to 70 mA or more are required, the batteries containing round cells may, in certain circumstances, be preferred. Winner batteries have, in the writer's case, proved very satisfactory when used as the 120 volt h.t. supply in portable transceivers. Owing to the initial high current drain, the overall voltage drops rather rapidly until it levels out at around 90 volts. A further four Winner 9 volt grid bias batteries coupled in series with the original raises the total voltage to close on 120, and many months of useful life lie ahead, with practically no variation.

For transistorized equipment, either the Mallory mercury batteries or the low voltage Leclanché batteries are suitable. Here again it is a choice of cost and/or space.

Acknowledgments

Thanks are due to the Mallory Battery Co. Ltd. and Ever Ready Co. (G.B.) Ltd. for their assistance in preparing this article and for the use of the illustrations.

HARWELL MOBILE RALLY AND HAMFEST

Harwell, Berkshire

Sunday, May 15, 1960

The programme will commence at 2.30 p.m.

At 3 p.m. there will be a coach trip for ladies and friends to places of interest in Oxford, lasting approximately two hours.

Commencing at 3 p.m. a limited number of visitors will be shown parts of the Atomic Energy Research Establishment, but applications, giving the visitor's full name, address and occupation, must reach the Honorary Secretary of the A.E.R.E. Radio Club, whose address is given below, not later than April 30, 1960. All applicants will receive a detailed programme and a map.

Buffet tea will be served at 5 p.m., followed by a distribution of prizes. Free parking facilities.

RALLY STATIONS

1930 kc/s—G3NNF/A 144·1 Mc/s—G3NNG/A

will be on the air from 12 noon.

All intending visitors are asked to notify the Honorary Secretary, D. T. Boffin (G3HS), 6 Highworth Road, Faringdon, Berkshire, from whom tickets (price 4/- each, plus s.a.e.) may be obtained.

Organized by the A.E.R.E. Radio Club.

NORTHERN MOBILE RALLY

Harewood House, near Harrogate

(By kind permission of H.R.H. The Princess Royal.)

Sunday, May 22, 1960

Organized by Spen Valley Amateur Radio Society.

R.S.G.B. 21-28 Mc/s Telephony Contest 1959

G3FPQ wins by 1000 points – UR2BU leading overseas station

EACH year sees a higher winning score for this popular contest and for 1959 D.L. Courtier-Dutton (G3FPQ) is away ahead of the rest of the field with his total of 5,305 points from 501 scoring contacts, an average of one contact every 4·3 minutes of available operating time or, as G3FPQ managed to get in a full night's sleep, the amazing feat of one contact every 3·3 minutes of actual operating. Truly a tremendous effort on which he is heartily congratulated.

In second place comes N. I. Bower (G5HZ) with 4,305 points from 409 scoring contacts made in 27 hours of actual operating—one contact every 3·9 minutes! G5HZ is also to be congratulated on his efforts and his consistency—fourth in 1957, third in 1958, and second in 1959.

Third place is shared by A. E. White (G3HCU) and A. J. Slater (G3FXB), two regular contenders who are always near the top. G3HCU was fourth last year and eighth in 1957. G3FXB, who did not enter last year, was fifth in 1957 so he too has moved up the table.

The leading overseas station was UR2BU operated by Karl Kallemaa with 4,080 points from 336 contacts. A picture of this station was published on page 268 of the December 1959 BULLETIN. The second overseas and leading Finnish station is OH5SL operated by Mrs. Irmeli Virtanen who scored 3,820 points. H. J. Best (9G1AA), who was second in the overseas listing for the 1958 contest, improved his score to 3,690 points but dropped to third place. Congratulations are due to all three stations for their successful efforts and for each scoring more points than any other overseas station in the past; the previous highest was 3,345, made by ZB1DC in 1958. The next three overseas placings all go to Finnish stations—OH5SM, OH5PN and OH5RZ.

From overseas conditions seem to have been difficult nearly half the time; SM5AJU, for example, did not hear any U.K. stations on 28 Mc/s but he did well on 21 Mc/s. From VE conditions were variable, the more easterly stations being stronger in U.K. than those farther west, while the stations "down under" had trouble in getting through the European "Sound Barrier." From W9VNG come reports of electrical

Call-sign	Points	PLACINGS	
		Home Position	Overseas Position
G3FPQ*	5305	1	
G5HZ*	4305	2	
G3HCU	4210	3	
G3FXB	4210		
UR2BU*	4080		1
G3JAY	4070	5	
G3NNT	4035	6	
OH5SL*	3820		2
G3KFT	3800	7	
9G1AA*	3690		3
G3JZK	3235	8	
G3YF	3140	9	
OH5SM	3120		4
G2QT	2960	10	
OH5PN	2925		5
GM3BCD*	2870	11	
G3NFV	2865	12	
OH5RZ	2685		6
G2DYV	2685	13	
G3JAF	2635	14	
ZB2A*	2545		7
GW3AHN*	2495	15	
IIAM*	2395		8
IINE	2330		9
SP5XM*	2275		10
CT1PK	2260		11
VE3BPV*	2250		12
G3CLG	2240	16	
G3XC	2155	17	
G3MA	2140	18	
G2DC	2105	19	
G2HDU	2070	20	
G3IGW	1835	21	
GI3JIM*	1820	22	
G3NJI	1725	23	
YU7AG*	1685		13
EA3LA*	1630		14
IIKF	1620		15
UA1CK*	1620		
YU3VV	1615		17
G2AJB	1515	24	
G2JB	1500	25	
G3LMH	1484	26	
OH5AB	1465		18
G2FUU	1420	27	
G3AGN	1405	28	
G3BDS	1390	29	
G8JO	1375	30	
KP4KD*	1315		19
UR2KAE	1315		
K2UTC*	1305		21
SL5AB*	1285		22
WIFZ*	1280		23
9G1BA	1275		24
5A3TM*	1265		25
HA9OZ*	1220		26
OK3KGI*	1215		27
ZB1CA	1210		28
W8HUD*	1210		
G3MPB	1210	31	
G3JSN	1200	32	
SM5AJU	1165		30
OH2QD	1160		31
HA5DG	1140		32
W8NWO	1140		
VE2AFC*	1135		34
OE3VP*	1120		35
VE3BMB	1120		
EA5FI	1110		37
IIDFB	1110		
VK2AKV*	1095		39
G2AHL	1095	33	
GM3NFR	1055	34	
W8WT	1035		40
IIHL	1025		41
VE1ADH*	1010		42
G6PR	975	35	
OZ5SQ*	975		43
FQ8AT*	970		44
K1CPD	955		45
SM1ABI	950		46
OH3QM	925		47
OK3KRN	910		48
EA2FE	905		49
G2HNO	905	36	
OQ5RS*	880		50
VK6CL*	880		
G3KWH	875	37	
IICKY	875		52
VK5MS*	860		53
EA2FD	830		54
G2HPF	820	38	
G3MWZ	805	39	
VE2AKQ	795		55
ZS5OA*	795		
OK1KKJ	775		57
G3MXP	760	40	
CR6DB*	755		58
W4RNP*	750		59
LA6CF*	715		60
VE3CAA	715		
OE5GA	705		62
W1RWH	705		
EA9AQ	685		64
OH4OW	670		65
VS6BJ*	660		66
HB9DX*	655		67
HP1AC*	650		68
G8TS	650	41	
EA3JK	630		69
EA7CQ	625		70
VE1YB	615		71
K1JSH	595		72
GM3HWN	570	42	
F8XP*	540		73
EA2DT	525		74
W1LKG	525		
GI3NKQ	505	43	
W3POP	500		76
W3HQO	475		77
W1EXZ/VE2	475		
SM3AVQ	470		79
W2QKJ	460		80
VK4FH*	430		81
SM7AFK	425		82
G8KU	415	44	
PY4AEX*	380		83
LA2AD	375		84
YU2DB	365		85
G3WP	350	45	
ZL3OB*	350		86
K8AEY	345		87
W1ZSD	325		88
W3NVS	310		89
LA4LG	305		90
W8KC	305		
W2LHL	285		92
W0MGI*	275		93
JA1BOW*	245		94
SM6RS	210		95
VE4NX*	200		96
VE2AYX	190		97
PY2BJO	185		98
W9VNG*	185		
LA4VF	180		100
OE9CZ	175		101
OZ7DX	170		102
JA6GT	140		103
G3MGL	135	46	
CE1BD*	130		104
JA1BF	115		105
JA3IS	115		
JA3JM	110		107

* Certificate winners.

storms and poor conditions. There is the usual complaint about the lack of activity in the rare countries—GC, GD, GI and GW—but nevertheless the contest seems to have been enjoyed by all. Particularly favourable comment was made on the friendly operating technique.

Equipment

Equipment in use shows an interesting variety. G3FPQ has all home-built gear including a 29 valve receiver and tri-band beam while G3HCU has an AR88, LG300 and two home-made three-element beams mounted some 40 ft. up on a wooden tower. UR2BU has a home-made nine-valve receiver and a three band cubical quad aerial system. A summary of the equipment used by a selection of stations has been prepared and it is interesting to see that although there is a variety of receivers the transmitters nearly all use an 813 or one or two 807s to feed either a three-element beam or cubical quad aerial. However, very creditable performances

DX Contacts from Great Britain

NOVEMBER 21, 1959 (21 Mc/s)

07.00	HZ1, UA7, UR2, ZC4, ZL1, 4X4, 9G1.
08.00	JA, OH, UB5, VR2, ZB2, ZL1, ZL2, ZL3.
09.00	EA3, I, LA, OE, SM, VK4, VU, ZL1, ZL2, ZL3.
10.00	EA, OE, OZ, UA4, ZL1.
11.00	HA, I, OH, OZ, SM, UB5, VK3.
12.00	I, OE, OK, YU.
13.00	OK, SM, SP, VS9, W3, W4.
14.00	CT, EA, VK6.
15.00	EA, SM, VE2, VE3, W2, W3, W8.
16.00	VE3, W2, W4, W8.
17.00	VE2, VE3, VE4, W2, W6, W7, W9, ZS1, ZS5, ZS6, 9G1.
18.00	HH, KP4, VE2, VE3, W2, W4, W8, W9.
19.00	CO, HP, PY, VE2, VE3, VP6, W1, W3, W4, W8, YS, YV.
20.00	CE, HH, HP, KP4, PY, VP2, W1, W2, W4, YV.
21.00	CE, KZ, PY.

NOVEMBER 22, 1959 (21 Mc/s)

07.00	UB5, UF6, VQ4, VS9, ZB1, ZL1, ZS6.
08.00	CT, JA, LA, OH, UC2, VQ3, ZC1, ZL2, 5A3.
09.00	EA, JA, LU, OH, UA0, UR2, ZB2, ZL1.
10.00	—
11.00	EA, HA, I, OE, SM, UA3, VE1, VK2, VK3, VK5, W1, W2, W3.
12.00	EA, VK2, VK3, VP5, W1, W4, W8, YN.
13.00	MP4, TI, VE1, VK2, VK6, VS6, W1, W2, W4, W8.
14.00	MP4, VE3, VK3, VK6, W1, W2, W3, W4.
15.00	VE2, W2, W3, W8, W9, YU.
16.00	—
17.00	VE2, W1, W8, ZS1, ZS2, ZS3, ZS5, 5A3.
18.00	VE1, VE2, VE3, W1, W2, W3, W4, W5, W8, W9, W0.

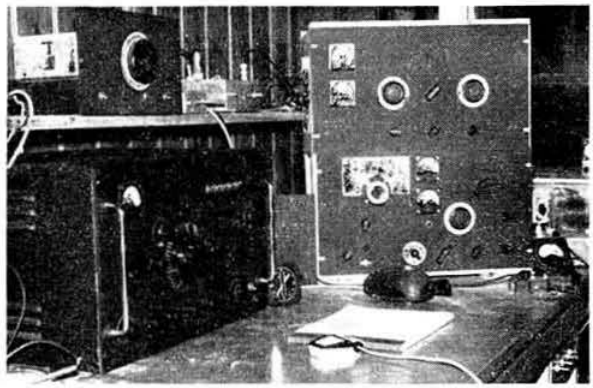
NOVEMBER 21, 1959 (28 Mc/s)

07.00	UA3, VK5, VK6.
08.00	JA, UA3, UD6, VK5, VU, ZB2, ZC4, 9G1.
09.00	JA, UR2, VK2, VK4, ZL3, 9G1, 9M2.
10.00	CN8, PY, UA3, UA9, UB5, UL7, VK6, VU, ZB1, ZB2, 9G1.
11.00	FQ8, OQ, VS6, VS9, VU, W1, XW8, 4X4.
12.00	KP4, UA1, UA9, UC2, UQ2, VE3, VP6, VP9, W1, W2, W3, W4, ZS6.
13.00	KP4, VE1, VE2, VE3, VP6, W1, W2, W3, W4, W5, W8.
14.00	CO, VE1, VE2, VQ2, W1, W2, W3, W4, W5, W8.
15.00	VE1, VE2, VE3, W1, W2, W3, W4, W8, ZE, ZS1, ZS5, ZS6.
16.00	LU, VE1, VE3, VO, W1, W2, W3, W4, W8, YU, ZE, ZS1, ZS5, ZS6.
17.00	CO, PY, VE2, VE3, W1, W2, W3, W8.
18.00	VE1, VE2, W1, W2, W3, W4, W5, W8, YV.

NOVEMBER 22, 1959 (28 Mc/s)

07.00	UB5, ZE.
08.00	JA, UA9, VQ2, VQ3, VQ4, ZB1, ZS1, ZS4, ZS6, 5A3.
09.00	ZC4, ZS1, 9G1.
10.00	CT, SP, UA9, VQ4, YU, ZB2, ZD2, ZS1.
11.00	MP4, OQ5, YO, ZB2, ZC4, 9G1.
12.00	CO, HC, HH, PY, UB5, UL7, VS6, W3.
13.00	HK, HP, VE1, VE2, VP6, VQ2, W1, W2, W3, W4, W8.
14.00	HP, LU, VE3, W1, W2, W3, W4, W8, W9, W0.
15.00	W1, W2, W3, W4, W5, W8, W9, W0, XE.
16.00	VE2, VE3, W1, W2, W3, W4, W6, W8, W9, W0.
17.00	W1, W2, W3, W4, W5, W8, W9, W0.
18.00	W1, W8, XE.

Note: Times shown are the period of one hour ending at the time shown, e.g. a contact at 10.05 would appear as 11.00.



The equipment at G3FPQ, Elstead, near Godalming, Surrey. L-R, the 29 valve receiver, el-bug/BK unit/monitor, all-band transmitter covering 3·5-28 Mc/s and Z match aerial tuning unit with the Monimatch indicator meter in the foreground. On the shelf above the receiver, L-R, is the s.s.b. v.f.o., s.s.b. generator and s.s.b. mixer unit. The s.s.b. gear is for 14 Mc/s only and drives the 813 p.a. to 100 watts p.e.p. The a.m. modulator and power supplies are under the operating bench. Before building the receiver last year, G3FPQ's only experience of receiver construction was a 1-V-2 battery job!

Equipment Used

Call-sign	Receiver	Transmitter	Aerials
G3FPQ	29 valve home-built	813 p.a., 140 watts input	VK6GU type tri-band beam 45 ft. high
G5HZ	AR88	LG300, 150 watts input	Quads
G3HCU	AR88LF	LG300, 150 watts input, modulated by a pair of 811s in class B	28 Mc/s: wide spaced 3 element array, gamma matched 46 ft. high 21 Mc/s: close spaced 3 element array, gamma matched 41 ft. high (all home-built)
G3FXB	AR88 plus Q Multiplier	Push-pull 807s, 120 watts input, modulated by p.p. 807s in class AB2	Three element beam fed with 450 ohm open wire feeder
UR2BU	Homebuilt 9 valve	No details (150 watts input)	Three band cubical quad
G3JAY	CR100 plus converter	Parallel 807s, 150 watts input, modulated by 807s in zero bias class B	Tri-band quad
OH5SL	Geloso	Geloso v.f.o., 6L6, 813, 150 watts input, modulated by EL37s	Three element beam
OH5PN	R1155A plus converter	PE08/40 p.a., 50 watts input	Three element beam, quad and dipole
ZB2A	HRO + home-built double superhet	No details (100 watts input)	Long wire and ground plane
GW3AHN	Eddystone S640	EF91, 12AU7, 12AU7, 807 (20 watts input)	Three element beam
IINE	Homebuilt 12 valve	807 p.a. (45 watts input)	W0WO
G3MA	HRO	Elizabethan, (120 watts input)	68 ft. Zepp.

are put up with less ambitious equipment such as the 68 ft. Zepp of G3MA, the experimental ground plane of ZB1CA, the dipoles of G3MPB and the single dipole of GM3NFR.

Logkeeping

The standard of log-keeping was very good and the more general use of the standard log sheets supplied by R.S.G.B. Headquarters made the checking of entries a much less arduous task. Errors were few but there was a little confusion over the bonus points system. Whilst on the subject of bonus points an interesting query was raised by G3JAY: whether to increase his points per contact ratio by going for additional bonus points or whether it would be more advantageous to increase the points per hour rate by working a long series of Ws. As an indication, a small table has been prepared for

Rate of Scoring

Call-sign	Contacts	Points	Bonus Points	Points per Contact	Points per hour
G3FPQ	501	2505	2800	10·6	193
GW3AHN	223	1115	1380	11·2	106
G2AJB	95	475	1040	15·9	93
G2AHL	63	315	780	17·4	115
G3MXP	52	260	500	15·6	72
			Overseas		
UR2BU	336	1680	2400	12·1	220
OH5AB	93	465	1000	15·8	254
VK2AKV	59	295	800	18·5	118
ZS5OA	29	145	650	27·4	241

stations selected at random to show the points per contact and points per hour scored. As the bonus system for overseas stations differs from that for U.K. stations they have been shown separately. Readers who are interested in statistics will draw some conclusions from this table—at first sight it seems " the harder you work the less you get " but the results disprove this.

Although the number of entries is slightly less than in 1959 the Contest is proving more popular each year and, as the table of DX contacts shows, receives world-wide support. Conditions seem to have been fairly good from the United Kingdom although the short skip on 28 Mc/s at times produced some very bad European QRM and complaints of very broad f.m. type signals. Generally, competitors comment that the going was harder than previously.

Check logs are gratefully acknowledged from the following: G2MI, G2BSA, G3NUG, GB2SM, GM3NQB, OE1FF, UA3KWA, VS9OM, W3BVO, W3LTO and ZE3JJ.

R.S.G.B. 21/28 Mc/s Telephony Receiving Contest 1959

A REPORT on the Receiving Contest held during the same period as the 21/28 Mc/s Telephony Contest will be published next month. The leading U.K. operator was R. G. Poppi (B.R.S.20570) and the leading Overseas entrant M. Dransfield in Nigeria.

A Three Valve Receiver for Two Metres

THE author of the above article, Mr. John Gazeley (B.R.S.20533), regrets that the following information was omitted from the March issue. C7 in Fig. 1 is a split stator type capacitor with ceramic end-plates and one fixed and one moving vane per section such as the ex-Government type WIS 3045-15 or the J.B. type C.808 (10 pF per section) suitably modified to give the necessary bandspread. In Fig. 2, RFC is 19 in. of 30 s.w.g. enamelled wire wound on a ¼ in. diameter former or on a 1 Megohm 1 watt resistor. The leads in Fig. 5 marked " to R7 and R12 " should read " to R7 and R13." In the Coil Data on page 404, L1 should have been described as 5 turns of 18 s.w.g. tinned copper wire, ¼ in. diameter and ⅜ in. long.

only about one-tenth of the voltage drop but low-price equivalents are difficult to come by from British sources just yet, although an increasing range is constantly coming on to the market.

Developments in D.S.B.

In *Proc. I.R.E.* (December, 1959) W2CRR of d.s.b. fame delivers a mathematical broadside at preconceived notions that s.s.b. must always be more effective than d.s.b. because of its narrower bandwidth. His article " Poisson, Shannon and the Radio Amateur " sets out to show that, in a congested band, broader bandwidths and many channels can be expected to provide the better communication reliability. S.s.b. adherents will winch at his suggestion that, at least for military applications, narrow-band techniques lead progressively to more expensive communications systems and less expensive jammers. It looks as though we can expect another outbreak of d.s.b. versus s.s.b. controversy.

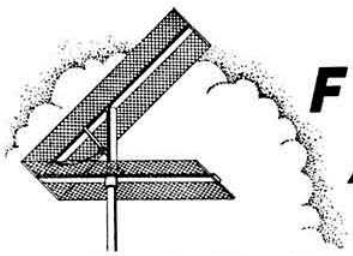
What may become an important new method of generating d.s.b. signals is described with a full circuit diagram in *Electronics* (February 5, 1960). Although considerably more complex than the usual d.s.b. arrangement, it is said to be fairly easy to apply to existing equipment, providing the advantages of a low level d.s.b. system with conventional class C multipliers and p.a., and avoiding a low-efficiency linear amplifier. Basically the new system has a low level gated balanced modulator (transistors are used) immediately following the oscillator; a gating wave being produced by passing some a.f. through a 100 per cent clipper. The output from this stage which will probably be described by some wag as suppressed carrier suppressed modulation is then passed through any required number of class C odd harmonic multipliers to a single-ended class C power amplifier. The main a.f. output from the modulator is passed through a full-wave rectifier system to provide a positive waveform which is used to envelope modulate the screen grid of the p.a. and so in effect puts back the modulation. This system allows very good carrier suppression to be obtained at high efficiency and, although fairly complicated, needs no difficult selective filters as required for s.s.b.

In Brief

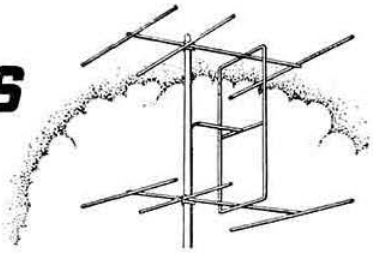
Yet another coincidence: two articles in the same month explaining how to use the Smith Chart to simplify the solution of transmission line problems (see January 1960 *Wireless World* and *QST*). . . . " Command " equipment must be about the most widely used of all current " surplus " buys: W2AWH in *QST* (January 1960) not only tells how a BC454 can be modified simply to cover both 3·5 and 7 Mc/s but also gives winding data for all bands from 1·8 to 56 Mc/s . . . In the same issue, W9KPM tells how to put a tribander for 14, 21 and 28 Mc/s on a 12 ft. boom by using capacitive hats as well as inductive loading. . . . An article on mechanical filters including filters for use in receiver i.f. stages appears in *British Communications and Electronics* (November, 1959). The February, 1960, issue of this journal has the first of a two-part description of parametric amplifiers.

Book the Date !

NORTH EAST OF ENGLAND
OFFICIAL REGIONAL MEETING
COATHAM HOTEL, REDCAR
JUNE 26, 1960



FOUR METRES AND DOWN



The Scottish V.H.F. Convention 1960 — The QRA Locator System

By F. G. LAMBETH (G2AIW)*

THERE was an attendance of 31 including Geoff Stone (G3FZL), representing the Council, at the Scottish V.H.F. Convention held in Paisley on March 12. The event was again very successful due, in no small measure, to the efforts of Clarke Bradford (GM3DIQ) and his helpers.

The proceedings commenced with a lecture by G3FZL on I.G.Y. and I.G.C. observations. In the subsequent discussion it was evident that most Scottish amateurs rely on their TV sets, tuned to channels other than the local, to give them warning of an auroral occurrence and are generally ready for such openings on 144 Mc/s.

Walter Ferrier (GM3BDA) suggested that Scottish amateurs should organize an attempt to span the Atlantic on 144 Mc/s by tropospheric propagation. Opinions were divided as to whether this should be attempted or not. As a side issue a considerable amount of interest was shown in the possibility of spanning the Atlantic by using the U.S. satellite balloons due to be released as part of " Project Echo." G3FZL suggested that a theoretical study of system parameters, e.g. transmitter power, aerial gain, effective reflecting area of balloon, etc., should be studied before any actual work is done on the project. (This matter is to be considered by the Scientific Studies Committee. —Editor.) Another topic for discussion concerned v.h.f. activity in Scotland. There was a general feeling that a considerable improvement could be effected if stations had regular schedules and known operating periods. There was also a feeling that stations south of the border very seldom turn their beams north to look for GMs. To help rectify this situation some active GMs stations and their operating frequencies are shown in the following list.

Call-sign	*Location*	*Frequency*
GM2FXN	Dundee	145·897 Mc/s
GM3AVF	Stirling	145·13 Mc/s
GM3BDA	North Berwick	145·848 Mc/s
GM3DDE	Edinburgh 12.	145·895 Mc/s
GM3DIQ	Kilbarchan, Renfrew	145.92 Mc/s
GM3EGW	Dunfermline	145·895 Mc/s
GM3FGJ	Edinburgh 4	145·845 Mc/s
GM3FYB	Dunfermline	145·745 Mc/s
GM3GUI	Friokheim, Angus	145·82 Mc/s
GM3HLH	Dundee	145·98 Mc/s
GM3HLH/A	Crail, Fife	145·96 Mc/s
GM3LAV	Edinburgh 8	145·81 Mc/s
GM3LAV/M	—	145·81 Mc/s
GM3UM	Edinburgh 10	145·92 Mc/s
GM4HR	Dundee	145·875 Mc/s
GM5VG	Glasgow S.3.	145·87 Mc/s
GM6SR	Edinburgh 6	145·79 Mc/s
GM6XW	Larbert, Stirling	145·805 Mc/s
GM6ZV	Glasgow	145·84 Mc/s

It was decided to hold the 1961 Scottish V.H.F. Convention in Edinburgh.

* *21 Bridge Way, Whitton, Twickenham, Middlesex.*

QRA Locator System

The " QRA Locator," which is now in general use on the Continent for locating stations (especially those in small villages which are usually unmarked except on local maps), has been recommended by the I.A.R.U. Region I V.H.F. Committee for general use by v.h.f./u.h.f. operators. It is of special use in these islands in connection with portable or mobile operation.

The diagram in Fig. 1 shows how the lettered squares are determined. They are based on the line of the Greenwich meridian: eastwards, every two degrees of longitude have a separate letter, starting with 0-2° " A," 2-4° " B " and so on. Westwards, 0-2° is marked " Z," 2-4° " Y " and so on. The latitude lettering starts at 40° N (" A ") and each degree northwards takes the succeeding letter of the alphabet. Thus the space between 51 and 52 degrees north is " L " and 53 to 54 N is " N." These large rectangles have to be subdivided

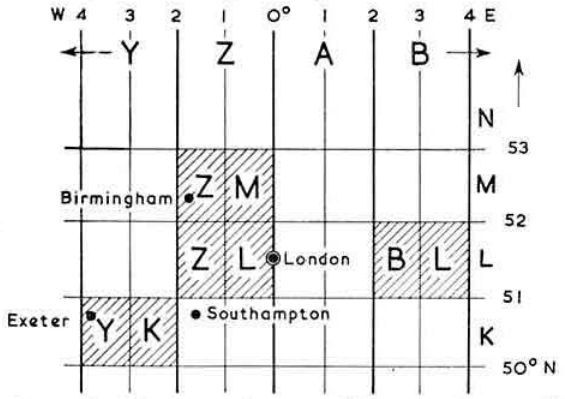


Fig. 1. The QRA Locator System applied to part of a map of Southern England.

into smaller squares for close location. The original idea was for 6 × 8 or 8 × 10 smaller squares, with final subdivision of these smaller squares, but as other suggestions have been made for different figures of subdivision, this matter will be dealt with later. Generally it is only necessary to mark a local map down to " sub-sub " squares, unless it is desired to check other people's locations, when it is suggested that each one should be done as it arises—otherwise the job is quite a big one and better done in short spurts! Comments on the system are invited as the matter is to come up again at the Folkestone Conference in June. Remember, if you work Continentals in contests, you will probably receive something like " HK 29A " (e.g. Snezka) instead of a town location.

Two Metre News

B.R.S.21476 (Penarth) has heard many local or near local calls recently but " nothing DX at all." A 417A converter is

in use together with a 6AJ4 equipment (both cascode arrangements) and comparative tests have been made between them. The 417A has more gain and the S/N ratio appears very good in both cases; though the 6AJ4 job produces lower S meter indications, everything heard on the one can be heard on the other. An experimental pre-amp using an EC80 (similar to the 6AM4) gave no advantage when used with the foregoing as both are superior valves. However, testing it out with an older converter (6AK5 triode and half 12AT7 cascode) there was a considerable improvement in gain and S/N ratio.

About a year ago **G3HWR** (Hampstead) started to keep logs on stations known to be on 2m. So far 534 stations are on file, including 383 heard at least twice on the same frequency. A check on these produced 91 duplicate stations (portables, mobiles and /As). Also on the list are 67 near European stations. Of the total, 237 have been worked. **G3LAR** has a list of 70 odd called whilst G3HWR was QRT recently. All told the list represents some 550 individuals and 650 call-signs of various kinds.

G3HWR notes that a number of stations in Zones 1 and 2 are appearing on frequencies near the centre of the band. Presumably this is because others are not tuning to the limits of the band, but if activity is at all high the DX is swamped under the locals. More careful tuning near the band edge would remove the excuse for these stations moving.

G5DW (Ashcott) considered the scoring system for the 144 Mc/s Open Contest heavily biased in favour of operators in the Home Counties. Not that it makes any difference to the top three places—" station efficiency, operating ability and enthusiasm will still get the right man there "—but it does penalize those in the backwoods, inasmuch as the result in points does not reflect the amount of effort put in by the operators. G5DW found conditions during the Contest fair but unstable, with anything from S9 to noise level in 2-3 minutes. Activity seemed low on the Sunday afternoon. During the month, conditions were good in patches. The latest aerial (10-over-10 Yagis) has now had a good period of test: up to 100 miles there is a big increase in signal reports in and out but for DX (200 miles and most sked QSOs) there is a drop of approximately 3db both ways, compared to the 12 element stack previously used. Several new stations have appeared on the band in the West Country. GW3LJP states that he is now active all evening, not only after 11 p.m. on 145·64 Mc/s. GW3LKL will soon be on the band. G5DW draws attention to the stations moving into the London frequency zones—which of course can lead to their temporary extinction. *Please, please* tune the *whole* band!

GC2FZC (Guernsey, C.I.) says the sked with G3JGJ continues, but now he has moved inland the results are not as good as they used to be. During the C.W. Contest on January 31 the following stations were worked: G5UF, G5DF, G3AS, G6OX, G3GVC, G2RY, G4OZ, G3NOH/A, G3HBW. G2BHN was heard. During the evening of February 28 an opening developed and the following were worked after 23.00 G.M.T.: G3ENY, G6PC, G2ANS, G3FMI, G3EJO, G3HYH, G5IG, G3ILX. G3FVK and G3HWC were heard. GC2FZC listens on 2m from 18.30/19.00 G.M.T. and during last October's opening worked 14 PA stations—quite a record for him.

G3AOS (Hale, Barns, Cheshire) was in Anglesey during the 144 Mc/s Open Contest using stacked halos and 3 watts and worked some 20 odd stations. Conditions, however, were not of the best, which was confirmed by GW2HIY. However, the experience was most interesting and during the summer months will be repeated on 145·304 Mc/s from sites in Anglesey as often as possible. G3AOS/M will also be operating at times during the week from various parts of the country. The idea of a calling frequency for mobile working is attractive and G3AOS asks whether the ball could not be started rolling with a selected frequency.

G3LHA (Coventry) says that G3NBQ has appeared locally on 145·00 Mc/s and is putting out a good signal from an excellent QTH with a QQV06/40A final. G3DKF, G3NAP and G3KEF all appear spasmodically. He agrees wholeheartedly with G5UM's letter in the January issue, but says that the keen v.h.f. man is also a keen constructor, and spends many hours striving for low noise figures, more output from the p.a. and bigger and better aerials. G3LHA asks for a word of praise for the excellent work done by the v.h.f. listeners, of whom he cites especially A.1491 who seems to be listening always and to hear everyone. The consequent reports are very encouraging.

Seventy Centimetres

G5MR (Hythe, Kent) made two-way contact on 420 Mc/s for the first time with F8GH on March 17; signals were RST569 both ways with only slight fading. Telephony was also tried successfully. Both stations were using F8GH type 7-over-7 slot fed beams. A second contact was made on March 18 but signals were down to S4. F8GH was also audible to G5MR on the morning of the 20th.

The regular 10.30 a.m. Sunday sked in Scotland continues between GM6KH, GM5VG and GM3GUO. GM2CHN usually provides reception reports and occasionally joins in on cross-band duplex with GM3GUO. GM6ZV is overhauling his 70cm gear and hopes to be on again shortly.

Scottish News

At a recent meeting of the West of Scotland V.H.F. Group discussion turned on the scarcity of reports locally which had been marked since the death of GM6WL. It was suggested that GM2CHN should try to fill the gap at least for the present.

Activity during the early part of the year was very low, but recently GM6KH, GM3NG and GM2CHN made the

nucleus of activity at 19.30 G.M.T. with a sked. Since the Scottish V.H.F. Convention the following have all been active on 2m: GM3GUO, GM6KH, GM5VG, GM3NG, GM6ZV, GM3LDU, GM2CQI, GM3INK, GM4HX, GM6XW.

The emphasis has been on early evening working (19.00/21.00) rather than later, and although no DX openings have yet been observed, the advantage of such local activity in populating the band was exemplified on the evening of March 14 when GM3LAV/M suddenly showed up operating from a site north of Bathgate, and was worked by GM3NG and GM6ZV, and heard by GM3GUO and GM2CHN. Other East of Scotland stations worked or heard during the week on 2m were GM3BDA, GM3DDE, GM4HR and GM6SR.

The prospect of renewed 2m activity in Ayrshire is looked forward to with considerable interest.

Four Metres

G3EJF (Bury, Lancs) has an RF26 unit in operation and on February 28 heard G3PD, G3AYT and G3HYH. The unit was modified in accordance with Dr. Koster's article in the November 1956 issue of the BULLETIN. The following method of getting it on the band without instruments may be of interest to others in the North:

(i) After modification, set all trimmers to maximum capacity and the tuning capacitor to half capacity.

(ii) Set the main receiver to 11·5 Mc/s and adjust the converter oscillator trimmer until the Holme Moss F.M. Light programme on 89·3 Mc/s is heard. The converter oscillator is then on 77·8 Mc/s. Check this by finding Holme Moss V.H.F. Home Service. It should appear at 15·9 Mc/s on the main receiver.

(iii) Reset the main receiver to 7·5 Mc/s, switch on a vacuum cleaner and peak the r.f. and mixer stages on the noise.

(iv) Check that the converter oscillator has not been pulled off frequency when tuning for the Light Programme on 11·5 Mc/s.

(v) The converter now covers the 4m band with the main receiver set at 7·5 Mc/s.

G5MR (Hythe, Kent) says that sporadic *E* propagation is likely to occur at this time of year.

G5YV (Leeds), in a letter to G5MR, reports that he has been operating on 70·310 Mc/s for some weeks and that activity in the north is gradually building up. G5YV is using a three-element Yagi 60 ft. high. The crystal-controlled converter uses a 6J6 p.p. r.f. stage and 6J6 p.p. mixer into an Eddystone 680X receiver. The transmitter is a converted S440B, the input to the p.a. being 30 watts, but a higher powered p.a. is under construction.

The most distant station heard or worked so far is G3IWJ (Liverpool) but there are many others either on 4m or almost ready for the band. Stations already operating, most of whom have been worked or heard, are G2JT (Oldham), G2QM (Bradford), G3LSA (Huddersfield), G6BX (Bradford), G3JZN (Manchester), G3PD (Oldham), G3FFV and G3GCX (York), G3JKD (Bradford), G3HYH (Eccles, Lancs), G3AYT (Hyde, Cheshire) and G2HCJ (Warrington, Lancs). (This is a grand list, although there must be many others now on 4m so what about some information, please?)

Auroral Report

G4LX reports that at the time SM6PU was making auroral QSOs with LA, SM and DL on January 10, 1960, similar conditions prevailed on the other side of the Atlantic with W1, W2 and W3 experiencing auroral propagation.

On February 2, 1960, SM6PU enjoyed a good opening between 18.00 and 20.00 G.M.T., and contacted OH1OZ, OH1NL and 10 SM stations. He heard LA8MC and many other SM stations, but failed to QSO. No signals were heard from DL except the Dresden TV on 145·26 Mc/s. This opening coincided with a similar opening in GM and North East England, details of which were reported last month.

The French nuclear explosion took place on February 13, 1960 and SM6PU noted auroral conditions at 22.45 that day. He contacted SM3AKW at 22.56 and again at 00.32 G.M.T. Although no reports of auroral QSOs in England have so far been reported on this date, very peculiar conditions prevailed on 28 Mc/s around midnight, and KH6, W7, VE7 and JA were being heard and worked by GM and North of England stations via the auroral path and with hollow notes.

SM6PU noticed aurorae on 19 days during the month, and enjoyed 144 Mc/s QSOs on February 2, 3, 13 and 14. On March 1 and 2, signs of aurora were again present on 50 Mc/s, but no results were obtained on 144 Mc/s.

LA9T reports two auroral openings on 144 Mc/s. On January 10, LA9T heard SM6CJI. He worked SM6PU and OZ7BR in the early afternoon of February 2. LA4YG heard and worked some SM4 stations—SM5ANW, SM5UU, SM5IH, SM7BAE and heard many other stations. Unfortunately few LA stations were aware of the opening.

FLASH—GREAT AURORAL OPENING

Coincident with a large sunspot that disrupted communication on the h.f. bands, there was a major auroral opening on March 31 and April 1, 1960. During the first phase on March 31, which ended at 19.15 G.M.T., G3HBW heard several Scottish stations including GM2FXN and GM4HR. OZ5BK was heard working G3LTF. The second phase commenced at 22.35 and G3HBW worked GM3FGJ, GM3BDA, GM2FHH, G4LX and PA0FB. DL6SS and DL1RX were heard. During this period PA0FB noted GM2FHH working DL7FU and GM3BDA calling G3HYH. GM4HR (Dundee) and GW2HIY (Holyhead) were heard in QSO. GM2FHH worked DL9ARA and called PA0FB but no contact resulted. LA3AA worked SP5PRG for the first LA/SP contact.

Similar propagation was again in evidence on April 1 and G5LK (Mitcham) heard PE1PL, DM2ADJ, several PA0s, two GMs, G3CCH, G5MR and incompletely identified DL2, OK1, SM6 and SP1 stations during the afternoon. PA0FB worked GM3BDA, DJ3FX, SM7BAE, DL1SN, GW2HIY, OK1GV, SP3GZ and OK1AMS. Stations heard included OZ5BK, DM2ADJ, G5MR (working GM3FMD), DL7FU, DL6QS and SM6BTT (calling SP9QZ). PE1PL worked OK1GV and OK2VCG.

Full report next month.

V.H.F. Briefs

G5MR (Hythe, Kent), who is a member of R.E.F., decided to participate in the French C.W. Contest on 4m, 2m and 70cm instead of in the 144 Mc/s Open Contest. However, conditions across the Channel, which had been good, fell off abruptly and results were disappointing.

The North West V.H.F. Group HQ. station is in operation on 2m. Until the club call-sign has been issued, operation will be under G3MAX/A or that of any other licensed amateur available. The station is on the air from Central Manchester on Monday and Tuesday evenings and the operators would welcome contacts. New members are always welcome at 164 London Road, Manchester.

G3GUD (Oadby, Leics.) was incorrectly referred to as G3EUD under " V.H.F. Briefs " in the March issue.

Reports and news for the May issue should reach G2AIW not later than April 18.

V.H.F. ACTIVITY NIGHTS
MONDAYS FROM 8 TO 10 ON TWO
WEDNESDAYS FROM 8 TO 10 ON FOUR
SATURDAYS FROM 8 TO 10 ON 70 CM
See how many stations you can work, and report the results to G2AIW (V.H.F. Manager).

LONDON U.H.F. GROUP
will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road,
at 7.30 p.m. on Thursday, May 5, 1960
All v.h.f. and u.h.f. enthusiasts welcome.

The MONTH ON THE AIR

A CHRONICLE OF EVENTS ON THE HF AMATEUR BANDS

By J. DOUGLAS KAY (G3AAE)*

THE longer hours of daylight are certainly increasing the period during which the bands can be used, and, while 28 Mc/s has not yet taken its seasonal dip on the trans-Atlantic circuit, both 21 and 14 Mc/s are staying open until midnight and beyond: possibly a better indication of the advent of Spring than is our wayward British climate. Activity continues at a high level on all bands but there seems to be a slight lull in the amount of DXpeditionary activity at the present moment, but no doubt the wandering Danny Weil will be changing all that in the very near future.

News from Far and Wide

From GW3AHN comes news that VU2KV was intending to visit Sikkim towards the end of March and operate as **VU2KV/AC3** for a period of from one to four weeks. By the time these notes are read we shall know the best or worst. GW3AHN also reports that the DXpedition to East Pakistan probably commenced on March 29, using the call-sign **AP5BIB** with W5PQA operating the same rig as he used from ZM7DA.

VP3MC, who is at present very active on both 21 and 28 Mc/s, a.m. writes to say that he will shortly be operating on c.w. He is an old timer whose previous call-signs have included VP2AT and VP6AT.

G3JAF says that a **9N1** station is expected to come up on 21 Mc/s c.w., a.m. and s.s.b. in the near future running a full kilowatt. Just listen for the pile-up!

W6YY (who now has 286 countries confirmed on 'phone) reports that **AP4UN** is supposed to be active on 14 Mc/s c.w. from East Pakistan, while **FB8CG** now has W6UOU's side-band transmitter.

The report about **ZD9AD** in the March *M.O.T.A.* has produced a letter from G3HPM, who used that call-sign when taking part in the Gough Island Scientific Survey some years ago. He says that it is understood that the call-sign ZD9AD has not been re-issued since he left, but two radio men are included in the relief party which is scheduled to take over from the present personnel towards the end of March, so there may be some more activity from Gough Island soon. G3AAE understood that **ZD9AK** definitely had skeds with a South African station on 14 Mc/s every Sunday, but many ZS stations have been asked about this in recent weeks and none of them knows anything about these skeds. G3HPM still has some ZD9AD cards if any deserving readers have not yet received confirmation.

VS9ARF writes to say that **VS9APS** is at present in hospital; **VS9AKE** is newly licensed and active on c.w. **VS9ANB** continues to use 'phone but not until around 19.00 G.M.T.

ZD2CKH is shortly leaving Nigeria for home leave before being posted to Sierra Leone, whence he hopes to appear on the DX bands with a **ZD1** call-sign before the end of the year.

G3LB was told by WA2EDV that the latter was collecting a 55 ft. boat around April 10, and will have a KWM-1 aboard which will be operated on 14,315, 21,415 and 280,685 kc/s sideband as **WA2EDV/MM.** Bermuda is listed as one of the ports of call.

G3JZR and others point out the appearance of what is apparently a new prefix for the Ukraine. **UT5CA** has been heard and worked on 21 Mc/s. So presumably the Ukraine may now appear under four different guises—UB5, RB5, UT5 and RT5.

From **9K2AZ** comes the very sad news that amateur licences have been withdrawn from all American personnel in Kuwait—this apparently ties up with the recent visit of one of the Kuwaiti sheikhs to the U.S.A. and the fact that he was refused an amateur licence while there. We can only hope that this gentleman does not visit the United Kingdom or else the British personnel in Kuwait may suffer a similar fate.

W3AYD writes to say that effective March 1, he is handling the QSL chores for **VP5AB** of the Turks and Caicos Islands, and requests s.a.e. or I.R.C.s for direct replies. His address is given in *QTH Corner*.

B.E.R.S.1008 says that he intends to operate from the Seychelles for six months starting on August 21 using a KWM-1 transceiver. During that period he plans to visit Agalega Is., Chagos Archipeligo, the Amirante Is. and the Aldabra Is. taking along the transceiver. These islands are amongst the most sought after in the DX world, and this trip will certainly be the cause of some feverish activity. Further details are promised at a later date.

It is learnt from B.R.S.22299 that **KH6OR** is going to Johnston Island in the early part of May, and may be operative with a **KJ6** prefix from there.

A.1980 says that **CN8GJ,** who is in the U.S. Navy, flew with his rig into Agadir after the earthquake and did invaluable work as communications link to the outside world.

DXotic Showcase

Call-sign	kc/s		G.M.T.	Country
VP1JH	3,520	c.w.	07.52	British Honduras
VP3YG	3,510	c.w.	07.41	British Guiana
VP5FP	3,512	c.w.	07.50	Turks & Caicos Is.
ZL3GQ	3,501	c.w.	08.00	New Zealand
VP1JH	7,011	c.w.	02.15	British Honduras
VP2KD	7,004	c.w.	08.30	St. Kitts
VP2LD	7,029	c.w.	23.18	St. Lucia
VP5FP	7,014	c.w.	02.00	Turks & Caicos Is.
HR1MF	7,004	c.w.	02.35	Honduras
YN4AB	7,008	c.w.	02.57	Nicaragua
KS4AZ	7,005	c.w.	03.35	Swan Is.
EA0AC	14,303	s.s.b.	15.30	Spanish Guinea
K6CQV/KS6	14,260	s.s.b.	08.25	American Samoa
OK7HZ/YI	14,315	s.s.b.	16.50	Iraq
TA3GI	14,330	s.s.b.	15.35	Turkey
9N1CJ	14,280	s.s.b.	16.35	Nepal
ZM6AA	14,070	c.w.	09.35	British Samoa
KS4AZ	14,071	c.w.	19.20	Swan Is.
ZS7R	14.010	c.w.	18.30	Swaziland
KM6BW	14,034	c.w.	19.30	Midway Is.
VR3Z	14,060	c.w.	08.30	Christmas Is.
VP2DA	21,200	a.m.	21.16	Dominica
VP2ML	21,135	a.m.	19.30	Montserrat
FF4AB	21,160	a.m.	17.35	Rep. Cote d'Ivoire
FF7AB	21,280	a.m.	12.00	Rep. Mauretania
HL9KJ	21,190	a.m.	08.40	Korea
9N1FV	21,120	a.m.	15.00	Nepal
VQ6GM	21,130	c.w.	13.50	British Somaliland
VP2ML	28,280	a.m.	18.50	Montserrat
VP3MC	28,150	a.m.	14.55	British Guiana
ZS7L	28,252	a.m.	17.38	Swaziland

* *Please send all contributions to R.S.G.B. Headquarters to arrive not later than the 18th of the month.*

VE3CRE, about to commence activities from Hamilton, Ontario, is none other than ex-**4S7IC.**

G3JZK nominates **FB8GP** as being an easy station to work for those who still lack Comoro Island contacts. FB8GP puts out an excellent signal around 21,150 kc/s between 16.00 and 17.00 G.M.T. with his 150 watts and beam aerial. He also says that VK3AZY has a regular sked with **VS5GS,** but in a very recent contact with VK3AZY, G3AAE was informed that VS5GS had left Brunei and should by now have returned to the U.K. G3JZK queries the removal of **Bouvet** Island from the country list and says that the Norwegians have a whaling station there. He will be accompanying the Cambridge University Wireless Society's DXpedition to the Isle of Man: the latter have been allocated the call-sign **GB6UW** for their **GD** operation. (Surely the prefix should be GD6 if the international call-sign allocations are to mean anything?)

DX Briefs

The world-wide Czech expedition will not be visiting **Yemen (4W1)** according to MP4BBW.

The A.R.R.L. has rejected an **HC8JU** QSL card forwarded for DXCC credit due to it being " a shipboard operation."

Many stations applying for **VU2ANI** cards have added the prefix /VU5 or /5, and VU2RM states that these applicants will not receive confirmation. They will only reply to cards giving the plain call VU2ANI. VU2RM further states that they have not sent their logs to W8PQQ as previously arranged, but implies that applicants should write direct to VU2RM. (Although their actual operation on the Andaman and Nicobar Islands was extremely slick, the arrangements made for QSL distribution seems to have been somewhat confused, and W8PQQ must have thousands of cards and coupons to which he cannot reply in the absence of the logs.)

VP2DX has been on from Montserrat signing **VP2ML.**

GW3ITD/MM aboard H.M.S. *Puma* states that he hopes to operate from land on **Tristan da Cunha** (ZD9) sometime in May; he may also operate from Mauritius at a later date.

W1WDD has heard from A.R.R.L. sources that when the **Malpelo** DXpedition comes off it will be given separate DXCC country status, but that the announcement will not be made in advance of the actual operation.

VK9AD is in charge of screening applicants for the position of radio operator on **Willis Island** (VK4). He says that two of the applicants are amateurs and that he will ensure that Willis Island is represented by an amateur. The tour of duty starts in May, so start looking for a VK4I in about a month's time.

VR1B's sideband gear is still in Fiji where difficulties in getting it to him are being experienced.

ZL2AHA, who has recently operated a QRP rig from Chatham Island as **ZL3VH/3** is planning to visit **ZM7** later in the year and will take a more powerful rig with him than he has been using from Chatham.

K6CQV/KS6 is active from American Samoa and will be operating from there for the next 18 months.

MP4QAO has now gone QRT, while MP4BCU is planning to operate from **MP4M** sometime in April. (*All the above DX Briefs by courtesy of West Gulf DX Club*).

The Pacific Area

KH6DLF reports that **K6CQV/KS6** came up about March 1, operating a.m. and s.s.b. around 14,275 kc/s usually between 06.00 and 10.00 G.M.T. **KC6SP** in the West Caroline Islands uses a.m. around 09.00 G.M.T. on 14,220 kc/s. **KW6DB** has been working into Europe between 06.00 and 08.00 G.M.T.

At 18.00 G.M.T. each Sunday on 14,265 kc/s there is a round table of Pacific stations who endeavour to work into Europe and Africa when conditions are favourable. **KJ6BV, K6CQV/KS6, KM6BI, KW6DB** and **W4FBN/KH6,** who acts as controller, are usually involved, while it is hoped that some other DXotic prefixes will join the fun in due course. Sideband is generally employed.

KG6IJ of Iwo Jima fame has been off the air for about a month. Some useful frequencies given are: **ZK2AB** 14,330 s.s.b., 07.30; **VR6AC** 14,240 a.m., 06.00; **ZK1BS** 14,315 s.s.b., 06.00; **ZK1AK** 14,030 c.w., 07.00 and **VR3Z** 14,085 c.w. 07.00.

DXCC Notes

From the A.R.R.L. comes news that **Campbell Island** (500 miles south of New Zealand) and **Auckland Island** (350 miles south of New Zealand) will be counted as one new DXCC country. Credit will not be given prior to June 1960, although cards may be submitted after June 1 for contacts before this date.

The A.R.R.L. also announces that after April 1, 1960 the city of Jerusalem will count for Israel DXCC credit, while stations located in the U.N. Truce Supervisory Sector bordering the city will continue to count as Palestine. However, applicants will still be given credit for Palestine for confirmations from Jerusalem stations worked prior to April 1, 1960.

French Togoland

ZD2AMS has sent a most interesting account of his recent DXpedition to Togoland, where he operated as **FD8AMS.** The equipment comprised a K.W. Vanguard transmitter and Eddystone 750 and Hallicrafter S40B receivers. The aerials were a multi-band G5RV, a folded dipole for 21 Mc/s and a Windom for 7, 14 and 28 Mc/s. The QTH was 25 miles from Lome on the edge of a lagoon and was completely surrounded by coconut trees. The aerials were slung between palm trees some 16 ft. above ground, which was as high up a palm tree as FD8AMS could climb!

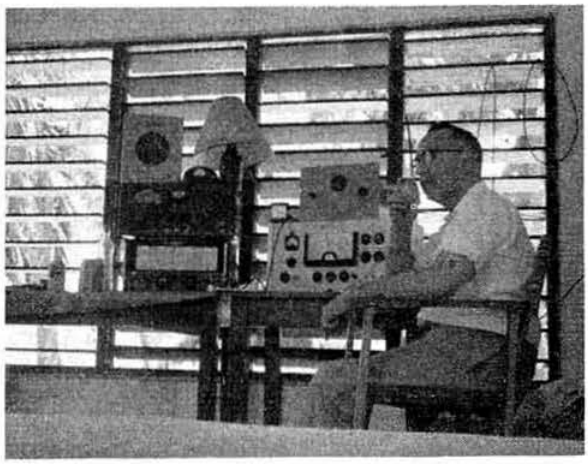
Operation commenced at 15.00 on February 11 on 28 Mc/s and the first CQ was answered by VE2YU, but after two more contacts the main electricity supply was switched off. This was a bitter blow as ZD2AMS had been assured that the electricity supply was satisfactory or otherwise he would have

QTH Corner

BV1USE	Via W9HCR.
CO6FA	Box 38, Fomento, Las Villas, Cuba.
FF4AB	P.O. Box 1863, Abidjan, Republique, Cote D'Ivoire.
FR7ZE	Robert Bedier, 3 Rue St. Bernard, St. Denis, Reunion Islands.
HI7CJY	Romana, Dominican Republic.
HP9FC/VQ8	Via VE7ZM.
HR2BD	P.O. Box 64, San Pedro Sula, Honduras Republic.
JZ0HA	Via W2CTN.
KG6AJF	C/o M.A.R.T., P.O. Box 445, Agana, Guam Island.
K6CQV/KS6	Paul Hodges, c/o Airport Project, Pago Pago, American Samoa.
KW6CL	P.O. Box 26, Wake Island.
MP4TAF	Sharjah, B.F.P.O. 64.
OQ0BH	P.O. Box 81, Astrida, Ruanda, Urundi.
OX3DL	Via W2CTN.
TA3GI	Via VE7ZM.
VP2LD	P.O. Box 181, Castries, St. Lucia, B.W.I.
VP2ML	Via K4SXO.
VP5AB	Via W3AYD, Michael Solomon, P.O. Box 731, Rockville, Maryland, U.S.A.
VP5ME	E. M. Barnes, North Base, Grand Turks Island.
VP8BK	Via LA1RC.
VQ6GM	P.O. Box 164, Berbera, British Somaliland.
VS5GS	Gordon Scott, c/o 25 Marsh Street, Warrington, Lancs.
VS6EL	R. H. Munro, 3 Piak Mansions, Hong Kong.
VU2PS	Mhow, India.
ex-ZB2N	F/Sgt. Bob Milton, R.A.F. Kinloss, Morayshire.
ZD1RO	P.O. Box 54, Freetown, Sierra Leone.
ZE4JS	No. 8 Pine Row Gardens, George Road, Hatfield, Salisbury.
ZS4HV	P.O. Box 120, Vryburg, O.F.S.
4S7EC	P.O. Box 907, Colombo.
ex-4S7IC	Via VE3CRE.
9K2BC	P.O. Box 907, Kuwait.
9NICJ	Ralph Dennis, c/o U.S.O.M., Kathmandu, Nepal.
9NIFV	c/o U.S. Embassy, Kathmandu, Nepal.

* * *

R.S.G.B. Q.S.L. Bureau: G2MI, Bromley, Kent.



Angus Murray-Stone (ZD2AMS) operating FD8AMS.

taken along his own 600 watt portable generator which would have assured him of round-the-clock operation. As it was, the mains supply was only regularly available between 17.30 and 23.30 G.M.T., with periods of about one hour on Sunday mornings, and then varied between 180 and 270 volts!

At about 19.00 G.M.T. every evening all the amateur bands would go completely dead, and no replies would be received to the many CQ calls transmitted on all bands. Even the B.B.C. overseas service could only be copied with great difficulty. Conditions generally improved around 21.30 but by this time the only signals that could be heard and worked were those from North America. Pile-ups and bad manners further complicated efficient operating, while many QSOs were completely spoiled by the station worked being obliterated by calling stations. Even so, 687 contacts were made (90 per cent of these being with North America) with 42 countries and 36 states.

ZD2AMS concludes by saying that now that he has got the hang of the local conditions and amenities (or lack of them), he intends to return armed with his own power source and aerial supports. Two further visits to FD8 are envisaged, one in late June and the other about the middle of October, so all those who missed the original FD8AMS expedition will have second and third chances. Those lucky enough to catch the first sessions are asked to wait patiently for their confirmations: W6KUT, who is handling the W/K cards is having the printing done and will send the surplus of cards to ZD2AMS so that he can answer the non-U.S. applicants.

28 Mc/s

This month 10m is way down in the popularity poll, especially in the transmitting department.

GW3AHN (Cardiff) talked to CR7CH (15.45, '300), FE8AR (11.30, '410), HP1AC (16.45, '450), PJ3AB (17.00, '350), RD6KAR (15.15, '300), ZD2JKO (14.40, '300) and OA4M (16.05, '200). **G3BHW** (Margate) on a.m. reports FE8AR (11.24, '350), PJ3AB (17.35, '310), VP2ML (18.50, '280) and VP3MC (14.55, '150).

G3MVV (Romford) reports HZ1AB (12.05, '500), VE7XD (19.05, '230), 9M2GA (14.45, '450) and VQ3HH (15.10, '300), while **G3JZK** (Cambridge) contacted RI8AAD (11.00), ZD1AW (17.40) and VU2PS (13.00) all on 'phone.

G3AAE had QSOs with RI8AAZ (09.42, '306), CR4AD (16.15, '432), ZD6RM (16.18, '344), ZS7L (17.38, '252), KR6GR (11.50, '264), VQ3BPD (13.30, '252) and KR6CR (11.22, '336).

A.1902 (Reading) logged UL7FA (16.35, '273), VP3MC (13.50, '215), RN1AT (11.54, '215), VU2PS (11.43, '325), 9K2AP (11.10, '285), RO5AZE (14.10, '380), RD6KAR (13.54, '100), and ZD2CKH (17.29, '270). **B.R.S.20317** (Bromley) reports ZB2A (16.20, '160) and VP2VA (18.30, '025) the latter on c.w.

B.R.S.22299 (Preston) heard CX5BR (19.20), HP1HC (17.50), KZ5AD (15.00), CR7CH (16.45), EL1D (10.05) and RO5AZ (14.10). **A.1859** (New Barnet) found CR4AD (16.22), HC1AM (20.17), HI7CJY (18.00), HP1HC (17.08), PJ3AD (13.55), TI2ES (17.38), ZD2JKO (13.25) and ZP5CZ (18.37). **A.1736** (Corby) lists XE3AF (16.30), HC1NE (17.05), RD6KAR (13.55), VE6AAE/SU (09.05), RL7ABI (09.30), RN1AAK (10.35), RI8AAR (13.15), RI8AVG (09.20), and HP1HC (16.05).

B.R.S.2292 (Hounslow) reports HI7CJY (19.00), ZD1AW (11.35), ZP5CF (19.10), VP3MC (16.04) and KZ5BS (16.18). **B.R.S.22013** (Hereford) who has logged 230 countries in all zones and has confirmations from 186 countries and 39 zones has heard 163 countries in all zones so far this year. In reporting for the first time he mentions VS6CL (10.30), FE8AR (17.20), VU2PS (13.16), VP6AL (16.48) and FQ8AT (16.26). **A.1908** (Lancs) completes the 10m story with ZD1AW (18.02), ZD2JKO (14.12), RN1AAK (10.42), RO5AGA (13.26), OA4ED (12.06) and EL4A (13.35).

Except where otherwise stated all the above listener reports are for a.m. signals.

21 Mc/s

The one thing that really spoils this band is the way the American novice stations transmit right up to the bottom of the American 'phone band, and really cut up the weaker DX 'phone signals that are coming through. Even so some very excellent DX has been worked and reported this month.

G3JAF (Lymington) talked to VP8CC (19.40, '120), VP8EH (20.05, '140), VS6CL (13.15, '300), VS1CC (16.28, '180), VP2DA (21.16, '200), VP2ML (20.40, '120), MP4TAF (14.15, '140), MP4TAH (14.15, '230), VS9AE (18.50, '185), GW3ITD/MM (19.13, '180), HL9KJ (08.40, '190), 9M2GA (15.00, '120), KA2NY (23.38, '200), UA0LA in rare 'phone zone 19 (09.12, '250), UI8AG (14.30, '160), FF4AB (10.10, '240) and PZ1AA (21.44, '220) while on the key he worked OA4BP (19.26, '030), VP8CC (19.15, '090), VQ6GM (13.30, '130) and KH6QH who was 589 for over an hour (18.21, '030).

G3YF (Chingford) lists a.m. stations XW8AL (14.45, '220), HV1CN (15.30, '288), VU2BK (15.45, '198), FB8XX (15.10, '120), ZS8O (16.45, '200), FE8AR (17.00, '195), FB8BX (15.45, '110), FB8CD Comoro Is. (15.00, '200), YA1DW (11.15, '180) and KA7DT (10.15, '195). **G2DCG** (Margate) keyed with MP4TAF (10.46, '095), VP9BO (16.49, '030) and VQ6GM (13.50, '130).

G6UT (Little Hallingbury) employed s.s.b. for VE8NH (16.52, '410), KZ5SW (17.56, '415), HI8GA (17.56, '415), MP4BBW (17.40, '410) and a.m. for XE3AF (14.25, '260).

G6XL (Leeds) worked MP4TAF (14.30, '120) and OR4TX Belgian Antarctica (18.25, '095) on c.w. and VP2ML (15.40, '190) on a.m. **G3JZK** talked to FE8AR (17.00), VS5GS (13.30), FB8GP Comoro Is. (16.00), MP4TAF (16.30), HI7CJY (17.50), JZ0HA (13.30), VQ8AD (16.20) and YA1BW (11.00) the latter on c.w.

G8DL (Christchurch), the 7 watt quad man, is still getting amongst the topline stuff and asks " why should I raise my power when I can work everything I hear despite competition." Why indeed! The latest list of stations to fall under the 7 watt spell includes VK9GK, KR6ZT, OR4TX, YA1BW, XE1PJ, FQ8AF, TI2CMF, CR7IZ, KL7DEP, VQ3CF, VQ6NG, MP4QAO, UI8AD, UJ8KAA and such prefixes as JA, KH6, KZ5, UA0, VU, VP9, EA9, ZD2, VQ2, VQ4, EL and OQ5. Perhaps next year we can run a little friendly contest to see if anyone can work 100 different countries in a year using 10 watts or less: it might even reduce the QRM on the bands a little!

G3BHW talked to FF4AB (10.23, '220), FF7AB (11.24,

'350), FB8XX (16.20, '150), VK9AN (13.52, '190), ZS3D (18.40, '210) and 9M2EZ (16.25, '120) and exchanged c.w. reports with VQ6GM (14.20, '120), YA1BW (14.15, '030) and ZS7R (18.10, '080). **G3MVV** used a.m. on KR6CG (14.47, '160), KG6AJF (13.15, '250), MP4TAH (13.55, '100), UL7FA (14.37, '150), 9M2GA (14.50, '145), UI8AG (14.35, '110), ZD1EO (14.45, '150), VS9AE (14.47, '110) and VS1GZ (14.20, '112).

GW3AHN, another QRP (25 watts maximum) devotee, contacted FF8BF (14.25, '050), KA2NY (11.00, '040), KR6ZT (12.10, '100), MP4TAF (12.35, '060), UA0KUV (11.30, '050), UT5CA (11.25, '010), VQ6GM (11.30, '150) and ZD2GUP (17.30, '025) on c.w. and CE3WN (19.50, '200), FD8AMS (17.50, '225), FE8AR (17.20, '140), FF4AB (17.35, '160), FF7AB (12.00, '280), FF7AG (16.15, '150), FQ8AJ (20.00, '240), KG6AJF (13.00, '275), MP4BCC (15.00, '220), PZ1AR (21.55, '190), TG9TI (18.55, '225), VP2DX (19.45, '200), VP3MC (21.50, '230), VP4MM (20.15, '240), VP8DW (19.35, '185), VS9AE (15.20, '180), YA1BW (12.10, '200), ZD2AMS (17.20, '230), VP2ML (20.00, '135), VK9RO (11.00, '300) and KG6AIL (13.15, '275). Perhaps the old adage " manners maketh man " could appropriately be changed to " antennas maketh ham " ! !

G3AAE talked to UI8AG (13.20, '162), VS6EJ (13.35, '180), FB8CF (17.25, '108), ZS3D (17.58, '198), FF4AB (18.10, '145), OQ0BH (18.30, '120), VP2ML (19.45, '125) and VE7ACS (20.27, '208).

A.1965 (Penzance) logged a.m. signals from TG9TI (18.44), OQ0JH (18.48), FB8CD (17.14), TF5TP (17.22), HC1JW (18.32), VE2AIG/SU (14.30), XW8AL (17.30), VS9AE (20.00) and GW3ITD/MM (21.30). **A.1980** reports KG6AGL/MM (13.20), 9G1AA (07.20), ZD3E now tragically a silent key, FQ8AW (19.21), VP2DX (19.00), HH2CB (18.16), VS9AE (12.20), TF5TP (13.41) and ZD1EO (18.32).

A.1859 found CE3WN (20.45), CR6AL (19.10), CR6CA (19.08), CT3AN (17.25), CX1BY (20.48), HC1JW (19.42),, HC1PL (21.05), VP2ML (19.12), VP7NB (17.40), VP8DH (19.28), VP8DW (20.30), VP8EH (20.35), VS9AE (11.38) and ZD1EO (16.50)' **A.1657** reports ZD3E (09.05), HK0AI of San Andreas Is. (16.00), OD5LA (17.11) and VQ2WR (17.30). **A.1902** records VS9AE (21.13), HK1CN (18.16, '165), UL7FA (08.28, '135), UI8AG (08.36, '120), OX3KW (17.54, '175), and VP5BL (18.48, '145).

A.1736 lists VE8WB (19.35), VP8DM (19.45), CR7CK (16.50), LU0EAB near EA8 (14.50), VP5BL (17.25), VP6KL (22.25), FF7AB (15.10), YN1AA (22.22), GW3ITD/MM (22.50), VP8DH (19.15), and ZD1RO (17.25). **B.R.S.-22299** (Preston) identified KA2NY (11.30), KA2CB (11.35), VP8CX (22.15), VP8DU (21.20), VP8DW (21.30), ZP5CF (16.25), PZ1AA (22.15), OA4M (21.15), TG9PR (19.05), VP5BL (20.50), KV4CG (21.10), MP4BCZ (19.40), 9K2AL (16.05), EL1D (22.15) and ZD6DT (18.35). **B.R.S.22013** found EL2G (17.02, '198), VU2PR (15.57, '179), FB8CD (16.08, '168), VP8EI (19.41, '080), and PY0NG, Trinidade Is.? (16.55, '190).

14 Mc/s

This is the place where things are really happening. Now that the U.S. 'phone band has been extended by another 50 kc/s to 14,350 kc/s, non-U.S. s.s.b. stations are popping up all over the place in ever increasing numbers: only the c.w. section seems to go on its normal unruffled course.

Just to get some idea of the increase in sideband activity in recent months let us deal with this mode separately and see how it compares with, say, c.w. The a.m. DX activity is comparatively non-existent anyway.

S.S.B.

MP4BBW (Bahrein), before leaving for a vacation in East Africa, worked VS1JO, VP7BI, OK7HZ/YI, 9M2DB, ZK1BS, FS7RT, OA4IY, AP2CR, TA3GI, ZL5AF, ZS5JY/ZS7, HI8AN, ZS8AN, ZS5JY/ZS8, ZS6TE/ZS8, UF6BC, EA0AC, KW6CL, MP4DAA and HS1B.

G3DO (Sutton Coldfield) worked KG1BX (19.20, '310), K6CQV/KS6 (08.25, '260), VP2AB (22.25, '330), OK7HZ/YI (16.50, '315), TA3GI (15.35, '330), VS1JO (17.40, '315), TI2EV (21.45, '305), VP9FR (22.20, '320), FF8AK (20.25, '315), 9N1CJ (16.35, '280), AP2CR (15.50, '305), YN1BS (21.25, '310), BV1USC (16.25, '290), KH6DLF (17.46, '290), CO2ZS (22.50, '300), VP7BI (22.45, '330), VP6WD (22.20, '330), VU2RM (17.35, '310), LA3SG/P Jan Mayen (14.45, '340), I5GN (20.45, '340), PZ1AX (21.20, '310), DU7SV (09.30, '305), VS6AZ (16.25, '270), CR6BW (19.30, '305), 9M2GR (14.00, '305), 9K2AZ (16.30, '209), XZ2AD (15.20, '310) and CR9AH (15.05, '310). Quite a tally.

G6UT worked OK7HZ/YI (17.20, '310), KR6GF (16.00, '315), BV1USE (16.30, '310), KG1BX (16.45, '320), ET2US (18.17, '320), 9K2AM (16.55, '330) and KR6MD (15.58, '320).

A.1918 (Eccles) reports s.s.b. signals from KC4USG (07.35), KC4USH (07.45), KG6AY (13.38), PJ2AV (23.35), KR6DI (13.40), BV1USC (15.45), AP2CR (16.04), VU2RM (17.42), VS1JO (17.47), VP7BL (21.28), VP7NT (22.50), KL7MF (08.05), SU1MS (22.30), W7UMH/KL7 (08.00), KL7CDF (16.30), KR6LL (18.02), VQ5FS (20.23), ZK1BS (08.15), and KG4AM (19.35). **B.R.S.20317** logged W4FBN/KH6, KJ6BV and KM6BJ (19.15, '275) who were all involved in the regular Sunday round table mentioned earlier. He also heard KW6CL (14.30, '296) and EA0AC (15.57, '305).

A.1814 (Glamorgan) reports 9N1CJ (15.01), LA3SG/P (14.57), VS6AZ (16.52), FF8AK (20.00), KL7CDF (11.25), KW6CL (12.33), KV4AA apparently finally foresaking his 100 per cent c.w. policy (14.45), SU1MS (19.24), 9K2AM (16.51), BV1USC (14.40), AP2CR (16.44), 9M2DW (17.00) and HZ1AB (16.55). A.1814 also heard VQ4ERR being operated by MP4BBW, who by this time will have returned to Bahrein.

B.R.S.22013 heard AP2CR (15.35, '302), MP4DAA (15.42, '298), VP4TI (21.00, '309), EA0AC (11.38, '295), YS1MM (00.05, '296), 9N1GW (15.41, '313) and TA3GI (15.00, '310). **A.1859** lists BV1USC (18.25), PJ2AF (21.55) PZ1AX (22.12) and TA3GI (19.17), while **A.1930** found AP2CR (16.15), ET2US (23.15), HH3DL (22.30), 9G1BF (22.25), KR6MD (15.45), KR6GH (15.15), MP4BBW (16.00), OY7ML (19.15), VE8AG Yukon (15.10), HS1B (15.15), 9K2AM (18.30), BV1USC (15.30), LA3SG/P (16.20), 9N1CJ (14.20), VQ5FS (21.30), KW6CL (13.50), ZS3X (20.20), KG1BO (20.46), XE1DE (10.16), VP6WD (22.00) and KL7CDF (11.00).

A.1696 reports TA3GI (16.40), VS1JO (18.12), VU2RM (13.55), AP2CR (16.48) and VE7ZM (16.45) while **A.1980** mentions KV4AA (21.17) and VQ5FS (19.35). And there rests the case for single sideband as reflected in your reports this month.

C.W.

G3YF goes in first for the c.w. team with FG7XF (11.15, '080), LU9ZV Antarctica (00.35, '080), KS4AZ (19.00, '060), KC4USV (10.45, '050), FB8XX (16.40, '050), VR2DK (10.30, '078), LA1NG/P (10.45, '006), FR7ZD (17.30, '072), UA0KUV (11.00, '085), UM8KAB (11.15, '007), VU2XG (16.30, '090) and JA6QK (16.15, '095).

G8KP (Wakefield) submits contacts with KS4AZ (20.50, '040), FB8XX (17.35, '030), OR4TX (19.30, '035) and YV1AD (21.30, '022). **G4CP** (Cannock) found VK0IT Macquarie Is. (20.00), KM6BW (19.30, '034), YN4AB (23.00, '050) and VS9AKE (19.30). G4CP has received cards from both 9N1GW and VQ8BBB giving him 288 confirmed, while the arrival of cards from ZM7DA and VU2ANI will take his score up to 290. Formidable indeed.

A welcome first report comes from **G3NIV** (London S.E. 24) who worked OX3NK (12.55, '013), VK2FU (ex-G2OY), VE3CXW/W4 (21.00, '013), XE1PJ (13.50, '010), XZ2TH (15.00, '015), and HK4JC (01.17, '085). **G3BHW**

lists KS4AZ (19.23, '040), LA1NG/P (22.41, '095), VP2AR (23.30, '030), VQ6GM (19.15, '110), VS9AHM/VQ6 (19.05, '050) and YN4AB (23.35, '010).

G6XL found ZK1AK (07.30, '050), KS4AZ (19.20, '071), FB8CQ (18.40, '050), FG7XF (01.20, '080), VK0JM (09.20, '080), VP2KD (23.20, '010) and succulent ZM6AA (09.30, '085). **G3AAE** managed to attract the attention of VR3Z (08.30, '060), ZK1AK (06.53, '050), VE0NI (20.55, '080), VQ6GM (20.12, '100), KR6GF (17.53, '002), OR4TX (19.15, '078) and VK7SM (07.44, '080).

B.R.S.22013 located KG6FAE (16.49, '010), VP2KD (00.07, '002), VS5AK (17.57, '020), ZS7R (18.09, '024), VQ6GM (19.59, '098), FY7YG (00.02, '015), while **B.R.S.-20104** (Harrow) reports hearing DU1OR (19.40, '030), VQ6AB (21.00, '095), ZS7R (18.30, '010), ZM6AA (16.02, '070), 9M2CP (16.40, '015), and KS4AZ (various frequencies and times).

B.R.S.2292 logged KH6BXU (06.30), VE7XX (06.38), HZ1AB (21.07), KS4AZ, VP1JH (20.21), VP3VN (21.06), VP9EP (22.08), and VS9OC Oman (19.15). **B.R.S.20317** found KS4AZ (23.44, '060) and XW8AI which appears to need a /FG7 after it unless the call has been reissued (23.45, '050).

Well, there we have the comparison between the oldest and the newest modes of amateur communication. Your scribe has in no way loaded either case, but has just extracted information from various reports in the usual way. Despite whatever other conclusions readers arrive at, one thing does stick out a mile: that B.R.S. and Associate members have no trouble in reading s.s.b. signals on receivers designed for a.m. or c.w. reception.

7 Mc/s

At this time of the year the lower frequency bands inevitably take a dip due to the increased noise levels but good DX is still being worked as the following reports prove.

G8KP worked EA6BC (19.40), PY2BIS (22.28), PY6HL (22.10), KS4AZ Swan Is. (22.48), VP6GT (23.45), OX3RH (19.20) and UA0AF (22.40).

B.R.S.20317 comes into his own from this frequency downwards and reports UM8KAB (23.15, '001), LA2ACH (23.24, '009), YV5GO (00.10, '006), CO7PG (02.00, '015), VP5FP Grand Turks Is. (02.00, '014), VP1JH (02.15, '011), HR1MF (02.35, '004), YN4AB running only 10 watts (02.57, '008), CM2QN (21.50, '002), KS4AZ (03.35, '005), ST2AR (03.42, '005), CO2SW (03.44, '006), KZ5TD (03.46, '008), ZS6AJH (03.56, '011), VK2XU (08.32, '020), VQ3CF (23.05, '004), UA0KDA (21.37, '003), YV5AIZ (23.55, '030), OX3AY (23.50, '010), VP2KD (08.30, '004), VP2LD (23.18, '029), VP6GT (23.38, '020), ZS2AG (23.35, '025), IS1MM (20.13, '012), and OX3RH (20.15, '012).

B.R.S.2292 lists W6RWK, WA6ATC, W7PQE and KZ5TD all heard between 06.30 and 06.50 while **A.1736** heard KP4AIU (07.40) on 'phone. **B.R.S.22013** logged VK3MR (20.06), YV4AY (00.02), UI8AD (00.08), UF6DD (00.15), OX3AY (00.16), CM8EM (23.44) and UM8KAB (00.29).

3.5 Mc/s

Only one solitary report this month, but as it comes from **B.R.S.20317** it should suffice to prove to the others what is being missed by sticking to the higher frequency bands. He reports VP3YG (07.41, '510), TI2CMF (07.43, '501), VP5PF (07.50, '512), VP1JH (07.52, '520), ZL3GQ (08.00, '501), PJ2AE (08.06, '525), UA9CM (23.47, '508).

Top Band

GI6TK (Co. Down) reports on a most interesting five way, five country round table which GM2UU and GM3CEA, GD3LXT, GW3FPF, G3FNQ and GI6TK had on February 28. This daylight contact was solid between all stations for over an hour, and as GI6TK points out, the only other additional country that they could have hoped to have taken part during daylight would have been EI. They are now trying to get an EI station interested so that it can become a six country affair. GI6TK also reports recently hearing W1BB, W1NNP, W1AW, W2GGL, VE1ZZ, HC4IE, VP5FP, KS4AZ, 5A2, ZB1, and a weak VP1 on Top Band.

The Commonwealth Competition

More and more members are joining in the fun, but contestants are finding the going a little harder now that the easier prefixes have been heard or worked on the various bands. G8KP still leads the field in the worked department, closely followed by G4CP and G3BHW, while in the heard branch B.R.S.20317 has an imposing lead by virtue of his prowess on the lower frequency bands. MP4BBW has been

Commonwealth Competition

	28 Mc/s	21 Mc/s	14 Mc/s	7 Mc/s	3·5 Mc/s	Total
G8KP	18	32	35	26	18	129
G4CP	15	29	41	18	16	119
G3BHW	33	43	37	2	—	115
G3AAE	39	22	31	14	—	106
G5VU	15	16	25	4	9	69
G8DI	12	10	14	12	18	66
G2BLA	12	13	9	10	3	47
MP4BBW	—	—	43	—	—	43
G3KHA	13	—	27	—	—	40
GM2DBX	16	17	5	—	—	38
G3BRE	—	2	7	8	15	32
G2DCG	7	21	3	—	—	31
G3KSH	7	9	6	4	3	29
G3GMY	12	12	3	—	—	27
G3MCN	10	12	1	—	—	23
VE2BAT	—	—	15	2	—	17
G3MGL	5	2	5	4	—	16

Band Leaders

28 Mc/s—G3AAE
21 Mc/s—G3BHW
14 Mc/s—MP4BBW
7 Mc/s—G8KP
3·5 Mc/s—G8DI & G8KP

B.R.S.20317	22	31	35	40	27	155
A.1859	32	44	34	2	3	115
B.R.S.2292	25	26	25	9	—	85
B.R.S.21008	27	35	20	2	—	84
B.R.S.22249	21	21	13	14	3	72
A.2065	16	16	12	2	3	49
A.1965	10	23	10	2	3	48
A.1902	27	11	9	—	—	47
A.1980	17	23	6	—	—	46
A.1946	7	9	8	2	3	29

Band Leaders

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

in East Africa on leave and his 14 Mc/s s.s.b. score is challenged by G4CP using mainly c.w.

Just a reminder that the scoring is based on one point per B.E.R.U. call area (your own excepted) on 28, 21 and 14 Mc/s, two points on 7 Mc/s and three points on 3·5 Mc/s. Please ensure that the separate band points are added up correctly when giving the total score.

* * *

More than 60 members wrote sending in information to *M.O.T.A.* this month, and it is because of their wonderful support that the length of this feature has been increased in recent months.

It is with great regret therefore that your commentator has had to decide that this will be the last *M.O.T.A.* to come from his pen, but increased domestic commitments, involving periods away from home, mean that it is in the Society's interests for a fresh author to take over the feature. Although the new commentator had not been nominated at the time of writing, it is hoped that members will all continue to give him their fullest support. It has been an honour writing this column and I would like to close by wishing you all good hunting and the best of DX. Contributions for next month should be sent to R.S.G.B. Headquarters to arrive not later than April 18.

Society News

Complimentary Dinner to Geneva Radio Conference Delegates

IN the absence of the President, who was indisposed, Dr. R. L. Smith-Rose, C.B.E. (Immediate Past President), presided at an informal dinner given by the Council to members of the United Kingdom Delegation to the Geneva Radio Conference. The dinner was held at the Kingsley Hotel, Holborn, on March 18, 1960.

The guests present were Capt. C. F. Booth, C.B.E. (Deputy Engineer-in-Chief of the Post Office and Chairman of the United Kingdom Delegation), Col. I. St. Q. Severin (Ministry of Defence and one of the two Vice-Chairmen), Commander P. T. Lawman, R.N. (Admiralty), Wing Commander R. J. Marks (Air Ministry), Mr. Eric Sharpe, M.B.E. (Radio Services Dept., G.P.O.), Mr. C. W. Sowton (Engineering Dept., G.P.O.) and Mr. J. T. Penwarden (Ministry of Aviation).

Mr. J. D. Kay (G3AAE) voiced the appreciation of the Society to Capt. Booth and his colleagues; Capt. Booth replied.

Following the dinner a number of colour transparencies taken by Mr. Arthur Milne, G2MI (Past President) during the Geneva Radio Conference and by Dr. Smith-Rose during the IXth Plenary Assembly of the International Radio Consultative Committee (C.C.I.R.) in Los Angeles were shown to a highly appreciative audience.

Big Attendance at High Fidelity Lecture

MORE than 120 members were present at the Institution of Electrical Engineers, London, on Friday, March 25, 1960, when Mr. H. A. M. Clark, B.Sc.(Eng.), M.I.E.E., G6OT, a Vice-President of the Society and Chairman of the Society's Technical Committee, lectured on High Fidelity Reproduction for the Amateur. Enjoyment of the lecture was enhanced by the playing of exerpts from a wide range of musical recordings made by Record & International Division of E.M.I. Ltd. of which Mr. Clark is Technical Director.

The equipment employed during the demonstrations was from the new H.M.V. range marketed by The Gramophone Co. Ltd. of Hayes, Middlesex, including a new variable reluctance stereo pickup and arm and the " stereosonic " preamplifier incorporating a c.r.t. monitor. A complete range of preamplifiers, f.m. tuners and power amplifiers was on show in the lecture hall.

The lecture was recorded by the Hon. Curator of the Society's Library of Recorded Tape Lectures, Mr. F. H. Lawrence, G2LW, who was assisted by Council Member Eric Yeomanson, G3IIR.

The Chair at the meeting was taken by Mr. Arthur Milne, G2MI (Past President), who had the support of several members of the Council. Mr. J. W. Mathews, G6LL (Vice-President), voiced the thanks of all present to Mr. Clark and to his colleagues.

R.S.G.B. Recorded Lecture Library

A NEW recorded lecture entitled " The Human Machine as a Radio Operator " by F. J. H. Charman, B.E.M. (G6CJ) is now available on loan to R.S.G.B. Groups and Affiliated Societies. It is illustrated with 15 slides.

Applications to borrow the lecture should be made to F. H. Lawrence (G2LW), 78 Venner Road, Sydenham, London, S.E.26.

National Convention

ALL enquiries regarding the National Convention, to be held in Cambridge from September 15 to 17, 1960, should be addressed to the Convention Secretary, 37 Metcalfe Road, Cambridge.

World Refugee Year

IT has been suggested to the Council that the Society should make a donation to the World Refugee Year Fund. The Council have given sympathetic consideration to the suggestion but have decided that the Society's Memorandum and Articles of Association do not permit the use of Society moneys for such a purpose. The Council believe, however, that many R.S.G.B. groups and affiliated societies would be glad to make a contribution to the Fund. In such cases it is suggested that the person responsible for arranging the collection should make it clear to the organisers of the Fund that those who have contributed are radio amateurs.

North London Dinner-Dance

DR. R. L. SMITH-ROSE, C.B.E., Immediate Past President and Mrs. Smith-Rose have accepted an invitation to attend the North London Dinner Dance as guests of honour. The function is being organized by the Barnet and District Radio Club on behalf of the R.S.G.B. membership in North London. Tickets, price 21/- each, can be obtained from Mr. F. E. A. Green (G3GMY), 48 Borough Way, Potters Bar, Middlesex.

R.A.E.N. to be featured at Exhibitions

THE work of the Radio Amateur Emergency Network is to be featured on the Society's stands at this year's National Radio and Television Show and the R.S.G.B. International Radio Hobbies Exhibition. Members willing to loan suitable equipment are invited to write to the Exhibition Committee at R.S.G.B. Headquarters.

NORTH OF SCOTLAND OFFICIAL REGIONAL MEETING AND HAMFEST

Aberdeen May 21-22, 1960

Programme:

Saturday, May 21

Civic Reception for members and wives	**10.30 a.m.**
Visit to Electronic Laboratory, Robert Gordon's Technical College	**11.30 a.m.**
Business Meeting	**2.30 p.m.**
Tea	**4.30 p.m.**
Lecture and Demonstration of S.S.B. Equipment	**4.45 p.m.**
Dinner	**7.30 p.m.**

Sunday, May 22

Visit to Auroral Research Station of Stanford Research Institute of California at Hillhead, Fraserburgh. Coach leaves Aberdeen 11.30 a.m., returning approximately 6 p.m.

A separate ladies programme has been arranged.

Dinner, 21/- ; Fraserburgh visit including lunch, 11/6 No charge for other events.

Full information and tickets can be obtained from A. G. Anderson, B.Sc. (GM3BCL), " Helford," Pitfodels, Aberdeen. Dr. R. L. Smith-Rose, C.B.E. (Immediate Past President) and the General Secretary (Mr. John Clarricoats, O.B.E.) will be in attendance throughout the weekend as representatives of the Council.

London Members' Luncheon Club Celebrates its Tenth Anniversary

THE Tenth Anniversary of the foundation of the London Members' Luncheon Club was celebrated at a meeting on March 18, 1960, at which the attendance of 49 included 14 founder members.

In proposing a toast to the present Chairman (Stanley Vanstone G2AYC), W. E. Corsham (G2UV), who was the first Honorary Secretary, remarked how much the Club owed to Mr. Vanstone whose friendly welcome to overseas visitors and general handling of meetings was largely responsible for creating the right atmosphere.

A toast to the Club was proposed by the original Chairman, Ken Alford (G2DX), who spoke of the good work done by the Club and by amateurs generally towards better international understanding—perhaps a more important aspect of Amateur Radio than most people realize. Replying, Frank Fletcher (G2FUX), Honorary Secretary, stated that attendance during 1959-60 had set a new record, with 52 overseas visitors from 19 different countries.

To mark his completion of ten years as Honorary Treasurer the Chairman made a presentation to Clem Jardine (G5DJ).

The General Secretary, John Clarricoats, O.B.E. (G6CL), as a result of whose inspiration the Club was formed, commented on the great progress made during the last ten years and proposed the re-election of the officers for the coming year with the addition of Miss Beryl Fletcher (B.R.S.20988) as Assistant Honorary Secretary.

Meetings are held on the third Friday in each month at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, London, W.C.1., at 12.30 for 1 p.m. Visitors, particularly those from overseas, are always welcome. Bookings may be made by telephoning G2FUX (RUIslip 2763) or R.S.G.B. Headquarters (HOLborn 7373).

Paris Dinner Club

VISITING amateurs are cordially invited to attend the Paris Dinner Club which meets at the Café La Chope, 66 quai de L'Hotel de Ville, Paris 4e, at 7.30 p.m. on the sixth of each month. Table reservations may be made by writing to Peter Catala (F2BO), 27 av. Ch. Lambert, Chatou (Seto), France, but unexpected visitors can also be accommodated.

Television Society Premium

THE Television Society has awarded the Mervyn Premium for the session 1958-59 to Mr. C. Grant-Dixon, Chairman of the British Amateur Television Club, for his paper "The Present Position in Amateur Television."

Current Comment (Continued from page 441)

ments to the gear and technique next time. In all a most happy occasion.

On the Continent D/F contests are called "fox hunts" and are extremely popular. In this type of event the hidden transmitter is free to move about, unlike the events staged in the United Kingdom where the site of the transmitter is fixed throughout the contest; indeed for an initial period the transmissions are on a pre-arranged schedule. The continental system of having a moving target, so to speak, undoubtedly adds to an already enjoyable form of competitive radio and it seems rather surprising that similiar events have never been held in this country. Presumably most "fox hunts" are on foot, which leads one to speculate whether a test of that kind would not be a useful addition to the programme at mobile rallies, especially as these events are generally held in places where there is plenty of open space for manœuvring. J.A.R.

NORTH MIDLANDS MOBILE RALLY

Trentham Gardens, Staffordshire

(4 miles south of Stoke-on-Trent on the A34 Manchester-London road.)

Sunday, April 24, 1960

The Rally will be opened by the Lord Mayor of Stoke-on-Trent, Mr. H. Clowes, O.B.E., at 12 noon.
More accommodation than ever before. Car park adjoining. Catering in the Ballroom (no prior booking necessary). Attractions include Miniature Railway, Italian Gardens, Rose Gardens, Hot Houses and Boating Lake. Amateur Television and R.A.E.N. will be demonstrated. Fix a QSL card on your windscreen for identification.

RALLY STATIONS

1·8 Mc/s—GB3SOT, G3EHM and G3HVI (out stations)
3·5-28 Mc/s—G3MAR/A 144 Mc/s—G3HAZ/A

Entrance to Gardens: Adults 1/6. Children 9d. Cars 1/-.

Organized by the Stoke-on-Trent Radio Society and the Midland Amateur Radio Society.

CHELTENHAM MOBILE RALLY

Montpellier Gardens, Cheltenham

Sunday, May 8, 1960

A mobile contest is being organized for Top Band operators, requiring competitors to match their skill and equipment against each other. Operating and navigating ability will be needed to obtain points. Intending competitors would be well advised to brush up their map reference reading. A route is being chosen to enable visitors to see some of the lesser known byways of the beautiful Cotswolds. Out-stations will act as check-points. The competition will commence at 14.00 and end at 15.30 B.S.T. Full details may be obtained from J. H. Smith (G2DUG), 27 Scott House, Arle, Cheltenham, Gloucestershire.

RALLY STATIONS

1920 kc/s (G3GPW/A) and on 145·39 Mc/s

Organized by the Cheltenham R.S.G.B. Group and Cheltenham Amateur Radio Society.

THANET MOBILE RALLY

Cliffsend, Ramsgate
Sunday, May 8, 1960

Organized by Thanet Radio Society.

Representation

THE following are additions to the list of County Representatives published in the December 1959 issue:

REGION 6
OXFORDSHIRE
F. A. Jefferies (G8PX), 1 Lovelace Road, Oxford.

REGION 10
MONMOUTHSHIRE
J. Hammond (GW3JBH), 46 High Street, Abersychan, Pontypool.

THE following are additions to the list of Town Representatives published in the December 1959 issue:

REGION 4
LEICESTERSHIRE—LEICESTER
N. Booth (G2DSF), 49 Baggrave Street.

REGION 6
OXFORDSHIRE—OXFORD
P. G. Tandy (G2DU), 4 Harbord Road.

REGION 7
LONDON WEST—EDGWARE AND HENDON
P. A. Thorogood (G4KD), 35 Gibbs Green, Edgware, Middlesex.

REGION 16
ESSEX—DANBURY
D. W. Davies (G3MWD), 11 Derwent Way, Chelmsford.

REGION 17
HAMPSHIRE—BOURNEMOUTH
D. A. Pilley (G3HLW), 116 Belle Vue Road, Southbourne.

Correction

The call-sign of Mr. B. B. Wilson, 18 Holdenby Drive, Park End, Middlesbrough, is G3LXG and not G3LYG as published on page 274 of the December 1959 issue.

Affiliated Society Representatives

THE following are additions to the list of Affiliated Society Representatives published in the December 1959 issue:

Bradford Amateur Radio Society: F. J. Davies (G3KSS), 39 Pullan Avenue, Eccleshill, Bradford 2.

Midland Amateur Radio Society: Maurice A. Brett (G3HBE), 55 Chestnut Drive, Erdington, Birmingham 24.

North Kent Radio Society: C. J. Leal (G3ISX), 1 Deepdene Road, Welling, Kent.

Norwich and District Radio Club: O. F. Simkin (G3HYJ), 15 Hillside Road, Thorpe-next-Norwich, Norfolk, NOR 48 T.

Oxford and District Amateur Radio Society: J. Hickling (G3GCS) 33 Chestnut Road, Botley, Oxford.

Mr. C. W. C. Overland

THE Editorial staff record with deep sorrow the death, suddenly, on March 23, 1960, of Mr. C. W. C. Overland (G2ATV). Mr. Overland was Editor of *The Radio Constructor* and his unexpected death is a sad and personal loss to all connected with that magazine and with Data Publications Ltd.

Silent Keys

G. W. D. BROWN (GM3DHD)

The death occurred in Edinburgh on February 21, 1960 of Mr. George W. D. Brown (GM3DHD). Mr. Brown was first licensed as a radio amateur in 1948 but prior to that time he had been a radio operator in the Merchant Navy. He rapidly became one of the best known DX enthusiasts in Scotland and was active up to the beginning of his last illness. In recent years he had been in the radio retail trade. George will be remembered by hosts of radio amateurs who knew him personally or over the air. They all extend sympathies to his family in their sad loss. C. W. D.

W. GILL (G6NP)

It is our sad duty to record the passing on March 6, 1960 of Mr. W. Gill (G6NP) of Morecambe, Lancashire.

Mr. Gill was licensed more than 30 years ago and until he moved to Morecambe on retirement from business in 1952 he operated regularly from his home in Heckmondwike in the West Riding of Yorkshire. He joined the Society in 1926 and became a Life Member in 1945. He was a founder member of the Spen Valley Amateur Radio Society and was well known for his QSO's on Top Band. At the time of his death he was an active member of the Morecambe & District Radio Club.

A familiar figure at R.S.G.B. meetings in the north of England, he will be sadly missed by a very wide circle of Amateur Radio friends.

Sympathies are extended to Mrs. Gill and her family in their sad loss.

W. H. MARSTON (G2PD)

It is our sad duty to record the passing of Dr. W. H. Marston (G2PD) of Small Heath, Birmingham, at the age of 62 years.

Dr. Marston, who was a member of the R.S.G.B. for many years prior to the War, had held a transmitting licence since the early 1920's. He played an active part in the formation of the Royal Naval Wireless Auxiliary Reserve between the wars and also served in the R.A.M.C. (T.A.). By 1939 he had risen to the rank of lieutenant-colonel, commanding 143 Field Ambulance. He took his unit to France and was evacuated during the retreat through Dunkirk.

Dr. Marston will be missed by many radio amateurs who worked with him in the old days.

Sympathies are extended to Mrs. Marston and her family.

JOHN MOYLE (VK2JU)

It is with great regret that we record the death on March 10, 1960, of John Moyle (VK2JU) after a severe operation and painful illness.

Editor of Australia's most widely read and successful radio magazine *Radio, Television and Hobbies*, Mr. Moyle had been a licensed amateur for very many years. During the recent Geneva Radio Conference he was attached to the Australian Government Delegation as a special adviser on Amateur Radio. Those who were privileged to work with him there soon realized his sterling qualities and can bear witness to the fine job he did for amateurs in Region III and, indeed, for amateurs everywhere.

Slightly built and frail looking, yet with amazing energy and tenacity, John was a formidable spokesman in the cause of Amateur Radio and he wore down, with persuasive and well informed argument, many attempts to deprive amateurs of some of their privileges.

Possessing considerable personal charm and a needle sharp intelligence, his interests ranged from electrotechnology to the arts and music. He could speak with knowledge and authority on a great variety of subjects. John will be sadly missed by his readers in Australia as well as by his Amateur Radio friends throughout the world.

Our sympathies are extended to his wife and two daughters who survive him. A. O. M.

CAPTAIN G. T. SMITH-CLARKE (G4RK)

The death occurred on February 28, 1960, at his home in Coventry, of Capt. George Thomas Smith-Clarke (G4RK). For the past 28 years Capt. Smith-Clarke had been with Alvis Ltd., most of the time as chief engineer and works manager. Eight years ago he brought out a prototype of an improved "iron lung" which allowed easier access to the patient, had six breathing speeds and was mobile.

In the field of Amateur Radio his chief interest lay in the v.h.f. bands. He was a member of the R.S.G.B. some years ago and had held the call G4RK since before the war.

Sympathies are extended to his widow and his family.

J. W. WARD (ZD3E)

It is with deep regret that we record the death, at the early age of 38, of Mr. J. W. (Jack) Ward (ZD3E) on March 17, 1960, as a result of an accident in Gambia. Jack, who was a native of Mansfield, Notts., had become very well-known in recent years as a DX operator, particularly on 10 and 15m where his voice will be sadly missed. At the time of his death, he was employed by the Electricity Board and was engaged on power station construction.

To his wife and child, we extend our heartfelt sympathy in their tragic loss. J. A. S.

W. O. WRIGHT (ex-G6FQ)

Older members resident in and around Hull will be sorry to learn of the death of Mr. W. O. Wright, who was a keen radio amateur before the war, although not active in recent years. An optician and pharmacist by profession, he was a member of the old Hull Short Wave Club, and joined the Society in 1934 as B.R.S.1623, obtaining a full licence in 1935. The local R.S.G.B. group held meetings on his premises during 1936. A keen supporter of N.F.D. he was always ready to give a helping hand to the beginner. A. G. D.

CONTEST NEWS

RESULTS — REPORTS — RULES

144 Mc/s C.W. Contest 1960

THE second of the 144 Mc/s C.W. Contests arranged by the Contests Committee and held on January 31, 1960, was well supported, the number of entrants being encouragingly up on the first of the series held in 1959. Altogether, 21 stations took part in the Low Power section and 16 in the High Power section.

Conditions were fair and activity average and most contestants found plenty to keep them occupied. The scoring system appeared to be popular and the event seems to be assured of a place in the contests calendar for some years to come.

The leading station in the Low Power section was G3AYC (B.B.C. Ariel Radio Club (Langham), London, W.1.), operated throughout by Brian Bower (G3COJ). G3AYC scored 1130 points from contacts with 53 stations in 24 counties. The equipment comprised a QQV06-40A (driven by a BC950A) running 29·4 watts input, a 6-over-6 slot fed beam and a cascode converter feeding into an AR88. Norman Ross (G3LAR) of Tooting, running 15 watts to a QQV03-10 feeding a 5-over-5 Yagi at 40 ft., was second with 880 points followed by Colin May (G3KMP) of Hastings who scored 860 points running 15 watts input to the same p.a. valve feeding a 6-over-6 slot fed beam aerial 15 ft. high.

Arnold Mynett (G3HBW) of Bushey Heath led the High Power section with 1425 points from contacts with 70 stations in 29 counties. His equipment included p.p. QY3-125s running 150 watts input, a 28 element array at 40 ft. and an A.2521 converter into an HRO. In second place was P. K. Blair (G3LTF) who worked 66 stations in 28 counties to make a score of 1360 points, closely followed by Geoff Stone (G3FZL) with 1355 points. G3LTF and G3FZL were both running 150 watts input to 4X150A p.a.'s. G3LTF used two 6 element Yagis stacked a wavelength apart while G3FZL's aerial comprised an 8-over-8-over-8-over-8 stacked slot fed Yagi.

The complete results are shown in the accompanying table. G6XA is thanked for submitting a useful check log.

LOW POWER SECTION

Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	G3AYC	1130	12	G5HZ	625
2	G3LAR	880	13	G2WS	560
3	G3KMP	860	14	G3LSP	540
4	G6GN	805	15	G3MEV	485
5	G3FD	760	16	G5UM	480
6	G3KAG	745	17	G3BGF	435
	G8DR	745	18	G3BRQ	400
8	G3NNG	735	19	G3NNK	315
9	G3CGQ	730	20	G3LTN	310
10	G3JR	650	21	G3JKY/A	170
11	G3GBO	630			

HIGH POWER SECTION

Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	G3HBW	1425	9	G2CIW	800
2	G3LTF	1360	10	G6XX	575
3	G3FZL	1355	11	G2UJ	555
4	G5YV	1145	12	G5UF	455
5	G5MA	1030	13	GW8UH	440
6	G5DF	1025	14	GW3MFY	415
7	G2XV	1015	15	G5MR	405
8	G3HWR	955	16	G5JU	350

R.S.G.B. Contest Forms

SPECIALLY printed log forms and cover sheets for the use of members taking part in Society contests are available from Headquarters on receipt of a large s.a.e.

420 Mc/s Open Contest, 1960

When: 09.00 G.M.T. to 23.00 G.M.T. on Sunday, May 22, 1960.

Station Locations: Stations may be operated from more than one site but the National Grid Full Six Figure reference must be recorded in the log for each location in the case of entries from G, GD, GM and GW. In all other cases, entrants must show latitude and longitude.

Eligible Entrants: All fully paid-up members of the R.S.G.B. resident in Europe. Multiple-operator entries will be accepted provided only one call-sign is used.

Contacts: May be made on either A1, A3 or A3a.

Scoring: Points will be scored on the basis of one point per mile.

Contest Exchanges: RST (RS) reports followed by the band identification letter B and the contact number and location (e.g., RST559B001 5NE Wigan).

Logs: (*a*) Must be tabulated in columns headed (in this order) " Date/Time (G.M.T.)," " Call-sign of station contacted," " My report on his signals and serial number sent." " His report on my signals and serial number received," " Location of station contacted," " Points Claimed."
Logs must show clearly when station locations are changed.
(*b*) The cover sheet must be made out in accordance with R.S.G.B. Contests Rule 5 and the declaration signed.
(*c*) Entries must be postmarked not later than **Tuesday, June 7, 1960.**

Awards: At the discretion of the Council, a **miniature cup** will be awarded to the winner and a **certificate of merit** to the runner-up. A certificate of merit will also be awarded to the non-transmitting member submitting the best check log in the opinion of the judges.

The General Rules for R.S.G.B. Contests published on page 423 of the March 1960 issue of the *Bulletin* apply to this contest.

D/F Qualifying Events

DETAILS of qualifying events are as follows:

RUGBY

Sunday, May 15.
Organizer: D. T. Price, 29 Pytchley Road, Rugby.
Frequency: 1875 kc/s.
Call-sign: G3BXF/P.
Map: Ordnance Survey, New Popular Edition, Sheet 132.
Assembly Point: A cross roads near Sharnford, approximately eight miles north-east of Rugby (N.G.R.493914, close to 310 ft. spot height).
Assembly Time: 13.30 B.S.T.
Entries and Tea: Intending competitors should notify the Organizer as soon as possible, stating the number in their party requiring tea, which will be held at the A.E.I. Clubhouse, Hillmorton Road, Rugby.

SOUTH MANCHESTER

Sunday, May 22.
Organizer: Jack Elliott, Hon. Secretary, South Manchester Radio Club, 2 Pennine Close, Blackley, Manchester 9.
Frequency: 1820 kc/s.
Call-sign: G3FVA/P.
Map: Ordnance Survey, New Popular Edition, Sheet 101.
Assembly Point: South Manchester Radio Club Headquarters, Mauldeth Road Lads' Club, Ladybarn House, 17 Mauldeth Road, Fallowfield, Manchester 20.
Assembly Time: 13.30 B.S.T.
Entries and Tea: Intending competitors should notify the Organizer at least seven days in advance, stating the number in their party requiring tea.

VK-ZL Contest 1959

IN the Phone Section of the VK-ZL Contest 1959, G3FPQ scored 990 points, G6XN 840, G5HZ 635 and G3NMR 395. G5RI was the leading English station in the C.W. Section with 1,380 points, followed by G6XN with 1,250, G5HZ with 990 and G3WP with 110. GI4RY scored 55 points and GW3JI 915. In the Receiving Section, B.R.S.15822 made 1,455 points and B.R.S.6604 935.

NATIONAL FIELD DAY 1960
FINAL DATE FOR ENTRY

Members responsible for stations participating in this year's N.F.D., to be held on June 11-12, are reminded that details of call-signs and frequencies to be used, together with the name of the group, club or affiliated society concerned, must reach the Contests Committee at R.S.G.B. Headquarters not later than MAY 2, 1960. The information should be set out as shown in rule 6.

The rules for N.F.D. 1960 were published in the December 1959 issue of the R.S.G.B. Bulletin.

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.

Emergency Organizations

DEAR SIR,—News that Crown Prince Moulay Hassan of Morocco had flown into Agadir with Amateur Radio emergency equipment, to help with disaster relief in that town, once again highlighted the service to the community which this aspect of Amateur Radio can provide. The day previous to this announcement I received urgent telephone calls from Red Cross Headquarters in London, enquiring whether any Amateur Radio links could be arranged with that organization's relief unit in Mauritius. There is no need for me to stress the difficulties, both legal and technical, of providing such an emergency link. I suggested that the Red Cross should try to make contact with radio amateurs in Nairobi and ask them to establish contact with the emergency Amateur Radio station which was reported to have been heard in action in Mauritius. This leads me to the point of this letter. I am endeavouring to compile a world-wide list of National Amateur Radio Emergency Organizations, and their headquarters' addresses, to which the Red Cross could appeal locally in such disasters as have just occurred.

Amateurs in the United Kingdom may not yet be able to handle relief messages direct from scenes of disaster to Red Cross headquarters in London, but the provision and linking up of local networks in the vicinity of disasters with Red Cross Relief Units would help tremendously in improving communications in circumstances which always tax every form of message handling to its utmost.

I should much appreciate any help in this matter which overseas members could give me.

Yours faithfully,
ARTHUR C. GEE (G2UK),
Chairman, R.S.G.B. Radio Amateur Emergency Network Committee.

" East Keal,"
Romany Road,
Oulton Broad, Suffolk.

Sophisticated Sideband

DEAR SIR,—I feel that s.s.b. is such a controversial topic that I cannot let pass without some comment the article " Sophisticated Sideband " by G2HDU (R.S.G.B. BULLETIN, January 1960).

I would submit that the difficulty in tuning s.s.b. which is put forward as one of the system's major disadvantages, is as nebulous as the inability to read c.w. I am not a " c.w. man " myself. I feel that as a means of communication it is out-dated and slow when compared to s.s.b., but with practice and perseverence I could train myself to receive Morse at speeds well in excess of the 12 w.p.m. required for an amateur licence. In just the same way, with practice, *anyone* can learn how to tune s.s.b. signals.

It is true to say that s.s.b. can be resolved using the simplest of receivers—if the operator understands what he is trying to do. Unfortunately, the attitude of a number of amateurs appears to be that unless they have the most modern of equipment (commercial, of course!) and a more-than-normal slice of luck, they will never make anything intelligible of this " Donald Duck" noise, if indeed there is anything intelligible there! This is a most regrettable attitude and we must do our utmost to stamp it out.

In some respects it is a result of a gregarious tendency on the part of s.s.b. enthusiasts, but it is also due to a certain degree of ignorance of s.s.b. on the part of the A3 fraternity. The former is understandable since the average amateur wants contacts. If, when using s.s.b., one tries to work A3 stations without any success, then there will not be much incentive to try again when it is known that other s.s.b. stations are on the band and that they will be able to resolve one quite easily.

The degree of ignorance of s.s.b. which exists among the unconverted can steadily be reduced through the medium of the articles on the subject in the BULLETIN and other sources if these are not rejected out of hand as being " too complex," " above my head " or " beyond my constructional capabilities."

To learn and understand any new technique, patience and perseverance are required. These are two attributes for which the amateur is rightly famed. Let us see greater evidence of them by an even wider interest being taken in s.s.b. than there is at present.

Contrary to G2HDU I would say that one of the advantages of s.s.b. is that it is very tolerant where interference is concerned. Two stations can work closer together than the 2·5 kc/s suggested by G2HDU by virtue of the fact that the interfering station is just a meaningless jumble of noise and the brain filters this out, so effectively giving an improved signal-to-noise ratio.

The question of whether to have a pilot carrier or not is a vexed one and has been discussed on many occasions. It now seems to be generally accepted that a pilot carrier which was of sufficient strength to enable accurate tuning would constitute a nuisance if the transmitter or receiver drifted slightly off frequency, or if two stations were working within two kc/s of each other.

With A3, the squeal caused by the two carriers heterodyning would obviously prohibit channels being less than 6-8 kc/s apart, depending upon the selectivity available at the receiving station. As a first move towards any such " channelling " it would be well worth while checking the stability of one's v.f.o. and also ability to zero-beat a station exactly. The latter usually depends upon having sufficient isolation between the v.f.o. and the later stages of the transmitter. There can be a shift of several kc/s between the frequency with the v.f.o. alone and that transmitted when the rest of the transmitter is operating as well.

Until a high order of stability is established as being a normal requirement on the amateur bands it will be well-nigh impossible to achieve the channelling suggested or even to have a contact on a crowded band without experiencing severe interference.

As G2HDU wrote (referring to bandwidth and stability requirements) " these requirements are not too difficult to meet." This is true, and with the increasing occupancy of the bands it is becoming more and more necessary to meet them, either by normal measures, or by less conventional methods such as that suggested by G2HDU.

Yours faithfully,
HAMISH V. BELL, B.Sc. (G3MAZ).

Widnes, Lancs.

Code Proficiency Runs

DEAR SIR,—At the moment it would seem that a great many new licensees, having worked hard to pass the Post Office Morse Test, forget the Code completely and develop into phone-only operators. Some of them seem to think that c.w. operating is out-of-date.

Being the holder of an A.R.R.L. Code Proficiency Certificate for 35 words per minute I feel that if it were possible for the R.S.G.B. to transmit Code Proficiency Runs at various speeds, to issue certificates for correct copies, and perhaps to go one step further than the A.R.R.L. by offering a run at 40 words per minute, it would give not only the newly licensed amateur but also the old timer something to aim at in the c.w. field. What do others think of the idea?

Yours faithfully,
BRIAN J. POOLE (G3MRL, ex-VS1FW, VS2FW).

Wednesbury, Staffs.

Woman's Hour Broadcast Criticized

DEAR SIR,—As the wife of G3QG I was delighted when I read in the BULLETIN that a talk was to be given in B.B.C. *Woman's Hour* on February 3 by Mrs. Margolis, wife of G3NMR, but I listened to the talk with amusement and annoyance. One does not have to be highly educated to obtain a licence; all that is needed is keenness for the hobby and common sense. As for her reference to being invaded by hoards of muddy-booted men I always find radio amateurs who visit us are most courteous; I enjoy entertaining them.

In my opinion, G3NMR and his wife, who are obviously new to the hobby, did nothing to further good neighbour relations in saying they were drilling for oil when erecting the aerial tower. As for losing friends we have gained many. I find happiness in helping my husband to erect aerials, drill panels, solder, etc., and I do understand " ham jargon." In conclusion, I hope the lady caught her train and kept the sked she proudly mentioned.

Yours faithfully,
WYN GREEN.

Luton, Beds.

S.S.B. on 14 Mc/s

DEAR SIR,—As the result of a request by the A.R.R.L. to the F.C.C., amateur stations in the U.S.A. are now allowed to operate in the segment 14,300 to 14,350 kc/s for a.m. telephony and s.s.b. transmissions. Hitherto this portion of the 14 Mc/s band had been almost exclusively used by stations outside the U.S.A. for s.s.b. contacts, but with the advent of the W/K stations, using up to 2 kW p.e.p., the position has now become very difficult. As users of s.s.b. will know, it is possible to have a 100 per cent QSO with signal strengths of only S3, but nowadays these weak signals are usually buried under exceedingly strong U.S. signals, often engaged in domestic " roundtables."

There is a suggestion that all s.s.b. stations outside the U.S.A. should move to the portion 14,100 to 14,125 (or 14,150) kc/s, and a number of prominent Asian and South American operators are strongly in favour of this move. However, it is felt that such a step as this may cause severe interference to a.m. stations using this portion of the band, and thus create bad feeling between the users of the two systems.

Concurrent with the proposed move on the 14 Mc/s band it has been suggested that the normally used centre frequencies for s.s.b. of 28,650 and 21,400 kc/s should be replaced by frequencies of 28,150 and 21,150 kc/s respectively.

It would be instructive to know the views of readers on this matter. If there were sufficient interest, perhaps the Society could use its influence to secure an internationally agreed arrangement.

Yours faithfully,

Romford, Essex. R. F. STEVENS (G2BVN).

Mr. J. R. Knight (G3JRK)

Mr. J. R. Knight (G3JRK) was inadvertently referred to as Mr. S. D. Knight in the letter from Mr. N. Ashton (G3DQU) published last month.

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	10 a.m.	London
	12 noon	Yorkshire
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 London area
	12.15 p.m.	Beaming west from London area

News items for inclusion in the bulletins should reach Headquarters not later than first post on the Thursday preceding transmission.

Can You Help?

● J. Bartlett (B.R.S.22517), 194 Purves Road, Kensal Rise, London, N.W.10, who urgently requires the circuit diagram of the Receiver type R.1116A.

Slow Morse Practice Transmissions

G.M.T.	Call-sign	kc/s	Town
Sundays			
09.00	G3BHS	1810	Southampton
11.00	G3GZE	1840	Blackburn
11.00	G2FXA	1900	Stockton-on-Tees
11.00	G3HZM	1860	Manchester
12.00	G3LP	1850	Cheltenham
12.00	GI5UR	1860	Belfast
20.00	G3MRA	1915	Southampton
20.30	G3HTA	1850	Exeter
21.00	G2FIX	1812	near Salisbury
Mondays			
18.30	G3NC	1825	Swindon
19.00	G3EJF	1820	Bury, Lancs.
19.00	G3KTP	1850	Heanor, Derby
19.00	G3LMT	1850	Exeter
20.00 †	G3EWE / G3IAF	1975	Woking
20.00	G3GZE	1840	Blackburn
20.00	G3MDH	1915	Southampton
20.30	G3AGN	1875	Felixstowe
20.30	G3MXI	1910	Derby
21.30 †	G3LGK / G3MXI	1980	Ilkeston, Derbys. / West Hallam, Derbys.
21.45	G3JKY	1900	Beckenham
Tuesdays			
17.30	G2AAM	1875	Swanwick, Derbys.
18.00	G3GZE	1840	Blackburn
18.30	G2FXA	1900	Stockton-on-Tees
20.00	G2FCI	1850	Exeter
20.00	G3IBI	1915	Southampton
20.00	G3NHR	1900	Hounslow
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3MEH	1900	Sutton, Surrey
20.30	G3MZD / G3NKX	1875 / 1875	Harlow / Loughton
21.00	G3EFA	1855	Southport
21.00	G3LSC / G3MKN / G3MXF	1875	Poole
21.15	G2CPL	1875	Felixstowe
21.45	G2UK	1875	Lowestoft
Wednesdays			
19.00	G3EJF	1820	Bury, Lancs.
19.00 †	G3MCJ / G3FLK / G2FCI / G3HTA	1845	Exeter
19.00	G3LZC	1830	Heanor, Derby

G.M.T.	Call-sign	kc/s	Town
Wednesdays			
19.00	G8RQ	1850	Chesterfield
20.00	G3BHS	1915	Southampton
20.00	G3GZE	1840	Blackburn
20.00	G3INZ / G3KRR / G3LSK / G3MGH	1920	High Wycombe
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3MXI	1910	Derby
21.00 / 22.00	G3AGX	1920	Hull
22.00 †	G3LGK / G3MXI	1980	Ilkeston, Derbys. / West Hallam, Derbys.
Thursdays			
17.30	G2AAM	1981	Swanwick, Derbys.
18.30	G3NC	1825	Swindon
20.00	G3NBV	1915	Southampton
20.00	G3NHR	1900	Hounslow
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3GDZ	1910	Kingsbury, N.W.9
20.00 †	G3EWE / G3IAF	1975	Woking
21.30	G3HMY	1850	Exeter
Fridays			
18.30	G3DMN / G3FVP	1880	Ipswich
19.30	G3FUA	1850	Kilburn, Derby
19.30	G3MHR	1850	Swanwick, Derbys.
20.00	G3JLS	1915	Southampton
20.00	G3INZ / G3KRR / G3LSK / G3MGH	1920	High Wycombe
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3ICX	1915	Sutton Coldfield
20.30	G3KGU	1915	Theydon Bois, Essex
21.30 †	G3NPO / G3KSS	1900	Bradford
22.00 †	G3LGK / G3MXI	1980	Ilkeston, Derbys. / West Hallam, Derbys.
Saturdays			
13.00	G2FXA	1900	Stockton-on-Tees
20.00	G3MCL	1915	Southampton

† *Alternately*

R.A.E.N. Notes and News

By E. ARNOLD MATTHEWS (G3FZW) *

AT the first meeting of the R.A.E.N. Committee for 1960 Dr. A. C. Gee (G2UK) was re-elected Chairman. Mr. C. H. L. Edwards (G8TL) is now Deputy Chairman and Mr. Matthews (G3FZW) continues as Honorary Secretary.

R.A.E.N. Message Pads

In future Civil Defence message form CDF4 will be used as the standard message form by R.A.E.N. groups. These pads are obtainable from H.M.S.O. or through local stationers, price 9d. each plus P.T. or £3/10/- for 100 plus tax. Protective covers (CDF5) are available for 1/6 each. The form is similar in layout to that used by many police forces and is familiar to other user services.

North Midlands Mobile Rally

The Birmingham Group of R.A.E.N. has again been asked to provide an exhibit at the rally at Trentham Gardens on April 24. The stand staff will be able to provide information about R.A.E.N. activities in all parts of the country.

Procedure Booklet

Members who require a copy of the new procedure booklet are reminded that a stamped, addressed envelope, size 10 in. × 8 in. with a 4½d. stamp is required to cover postage. Controllers are not empowered to make any other conditions of issue.

Around the Groups

Hampshire Group having carried out a survey of membership several non-effectives have been struck off the register. At a meeting held to revive activity in Portsmouth some new members were enrolled. There is a great need for more members in the **Aldershot, Farnborough** and **Basingstoke** areas and potential members are asked to contact the County Controller, G. A. Allcock (G3ION), 28 Granby Grove, Highfield, Southampton. There is a considerable interest in teleprinter operation in Southampton at the moment. This mode seems to be finding increasing favour in R.A.E.N. for fixed links and one wonders whether it will become standardised for such purposes. A Lowestoft-Felixstowe link is already in operation on 2m and it would seem logical to extend this to London and thence to Hampshire, since recent tests between G3FZL and G3ION seem to indicate that such a link is practicable on v.h.f.

There has always been some activity on the **Isle of Wight** (which is administered for R.A.E.N. purposes by Hampshire), but the appointment of an A.C. should put us in a better position to give the St.J.A.B. the service they require there.

Birmingham and **Warwickshire** are the latest groups to have been contacted by St. John and a short demonstration was given at the Birmingham H.Q. on March 20; an exercise is being planned. V.h.f. development shows slow progress, but links with Rugby and Stoke-on-Trent have been tested and there are now three v.h.f. mobiles in the group.

Personnel

The following have been appointed Area Controllers: L. Jackson (G3HPR), 8 Arnott Avenue, Gorleston-on-Sea, Great Yarmouth, Norfolk (East Norfolk); G. W. Lamb (G3MNL), 110 Boundary Road, Carlisle, Cumberland (Carlisle); A. W. S. Fowler (G3FAN), 20 John Street, Ryde (Isle of Wight).

H. Lawley (G6ZG) has resigned from the office of A.C., East Norfolk, but will act as deputy A.C.

* *1 Shortbutts Lane, Lichfield, Staffs.*

OZ-CCA Contest, May 14-15, 1960

THE annual OZ-CCA Contest organized by the Danish National Society will start at 12.00 G.M.T. on May 14 and end at 23.59 G.M.T. on May 15. Phone and c.w. will be permitted on all bands from 3·5 to 28 Mc/s and on 144 Mc/s. Contest exchanges will comprise the signal report plus the contact number (foreign competitors) or a county index-mark (Danish stations). Each completed contact will score one point except on 144 Mc/s where each contact will be worth two points. The final score will be the total number of points multiplied by the number of Danish counties worked.

Entries, which must be postmarked not later than June 1, 1960, should be sent to the Traffic Dept. E.D.R., Box 335, Aalborg, Denmark, from whom further details are available.

Goose Bay QSO Party

THE Annual QSO Party organized by the Goose Bay Amateur Radio Club commenced on April 8 and will end at 23.59 G.M.T. on April 18, 1960. The " Worked All Goose " Certificate will be awarded free of charge to all U.K. amateurs submitting logs showing that they have worked four VO2 stations during the period of the party. Entries should be sent to Ted Harvey (VO2AB), Awards Manager, Aeradio, Department of Transport, Goose Bay, Labrador.

London Audio Fair

TICKETS for the Audio Fair to be held at the Hotel Russell, Russell Square, London, W.C.1, from April 21 to 24 may be obtained by sending a stamped addressed envelope to Audio Fairs Ltd., 22 Orchard Street, London, W.1. The Fair will be open daily from 11 a.m. to 9 p.m. (Thursday 11 a.m. to 4 p.m.—trade only.) Tickets may also be obtained from radio and audio equipment dealers.

CONTESTS DIARY

April 24	D/F Qualifying Event (Oxford) (For details see page 422, March 1960)
April 30—May 1	P.A.C.C. Contest (C.W. Section) (see page 420, March 1960)
May 7-8	P.A.C.C. Contest (Phone Section)
May 7-8	Russian DX Contest (see page 423, March 1960)
May 8	First 144 Mc/s Field Day* (For details see page 422, March 1960)
May 15	D/F Qualifying Event (Rugby) (For details see page 463)
May 22	D/F Qualifying Event (South Manchester) (For details see page 463)
May 22	420 Mc/s Contest (For details see page 463)
May 29	D/F Qualifying Event (High Wycombe)

June 11-12	- National Field Day (see page 276, December 1959)
June 19	- 70 Mc/s Contest
July 3	- Second 144 Mc/s Field Day*
July 10	- D/F Qualifying Event
September 3-4	- European V.H.F. Contest
September 3-4	- National 144, 420 and 1250 Mc/s Contests*
September 4	- D/F National Final
September 25	- Low Power Field Day
October 2	- R.A.E.N. Rally
November 6	- Second 1·8 Mc/s Contest
November 19-20	- R.S.G.B. Telephony Contest R.S.G.B. Telephony Receiving Contest

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

Council Proceedings

DECEMBER 1959 MEETING

Résumé of the Minutes of the Proceedings at a Meeting of the Council of the Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Thursday, December 10, 1959 at 6 p.m.

Present: The President (Dr. R. L. Smith-Rose in the Chair), Messrs. N. Caws, C. H. L. Edwards, D. A. Findlay, E. G. Ingram, J. D. Kay, A. O. Milne, L. E. Newnham, W. A. Scarr, P. H. Wade, A. C. Williams, E. W. Yeomanson (Members of the Council), John Clarricoats (General Secretary) and John A. Rouse (Deputy Editor).

Apologies for Absence were submitted on behalf of Messrs. H. A. Bartlett, K. E. S. Ellis, J. H. Hum and W. R. Metcalfe (who was indisposed).

Absent: Mr. H. W. Mitchell.

* * *

Historic Equipment

It was reported that Mr. Maurice Child had donated to the Society a number of items of historic radio equipment. (The equipment is being stored by a member of the Council until such time as facilities can be provided to display the equipment—EDITOR.)

Cash Account

Resolved to receive and adopt the Cash Account for November 1959 as prepared and submitted by the General Secretary.

Membership

Resolved (i) to elect 125 Corporate Members and 42 Associates; (ii) to grant Corporate membership to two Associates who had applied for transfer.

Application for Affiliation

Resolved to grant affiliation to H.M.S. Mercury Amateur Radio Club.

QSL Honoraria

Resolved to award honoraria totalling £87 3s. to ten QSL Sub-managers.

Staff Christmas Boxes

Resolved as a token of good will to award Christmas boxes in the form of gifts in kind to the total value of £17 17s. to the seven members of the staff.

Annual General Meeting

Consideration was given to communications received from two members setting out questions which they proposed to ask at the Annual General Meeting on December 11, 1959.

Resolved that the Honorary Treasurer should give members the maximum possible information.

British Red Cross Society

Consideration was given to a letter from the Home Controller, British Red Cross Society (Major-General Brian Daunt) in which he referred to the B.R.C.S. Headquarters transmitting station and to liaison between the R.A.E.N. Committee and B.R.C.S. Headquarters.

Resolved that Major-General Daunt be invited to meet the General Secretary and certain members of the R.A.E.N. Committee to discuss the points raised in Major-General Daunt's letter to the Society.

Supplementary Report of the Council

The Supplementary Report of the Council was approved.

News Bulletin Service

It was reported that an *ad hoc* Committee set up by the Council to consider how best to extend the scope of the News Bulletin Service had suggested that transmissions should take place from three additional areas.

Resolved to approve the recommendations and to request the G.P.O. to give favourable consideration to them.

Retiring President and Council Members

Dr. Smith-Rose was thanked by his colleagues for the valuable assistance he had rendered to the Society during his year of office. Dr. Smith-Rose thanked the Council and then referred to the fact that Messrs. Findlay, Hum and Scarr would be retiring from the Council at the end of 1959. He thanked the members concerned for the great service they had given to the Society over a period of many years. Messrs. Findlay and Scarr made suitable reply (Mr. Hum was absent from the meeting).

The meeting terminated at 8.55 p.m.

JANUARY 1960 MEETING

Résumé of the Minutes of the Proceedings at a Meeting of the Council of the Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Thursday, January 21, 1960, at 6 p.m.

Present: The Immediate Past President (Dr. R. L. Smith-Rose in the Chair), Messrs. H. A. Bartlett, N. Caws, K. E. S. Ellis, R. C. Hills, E. G. Ingram, J. D. Kay, A. O. Milne, L. E. Newnham, F. K. Parker, F. A. Russell, G. M. C. Stone, A. C. Williams, E. W. Yeomanson (Members of the Council), John Clarricoats (General Secretary) and John A. Rouse (Deputy Editor).

Apologies for Absence. Apologies for absence were submitted on behalf of the President (Mr. W. R. Metcalfe), who was indisposed, and Mr. P. H. Wade.

* * *

Welcome to New Members

The Chairman extended a warm welcome to the newly elected members of Council (Messrs. Hills, Parker, Russell and Stone) and presented them with their badges of office.

Badges of office were also presented to the Immediate Past President (Dr. Smith-Rose) and the Penultimate Past President (Mr. Newnham).

Financial Reports

Resolved to receive the Cash Account for December 1959 as prepared and submitted by the General Secretary and the Income and Expenditure Account for the six months to December 31, 1959, as prepared and submitted by the Honorary Treasurer.

Membership

Resolved (i) to elect 102 Corporate Members and 47 Associates; (ii) to grant Corporate Membership to 7 Associates who had applied for transfer.

Applications for Affiliation

Resolved to grant affiliation to the following Societies and Clubs: Cathays High School Scientific Society Radio Club; Chiltern Amateur Radio Club and Crawley Amateur Radio Club.

Executive Vice-President

Resolved (i) to accept the resignation of Mr. S. L. Hill (G8KS) from the office of Executive Vice-President; (ii) that in consequence of Mr. Hill's resignation a casual vacancy exists in the office of Executive Vice-President; (iii) to appoint one of the Ordinary Elected Members, namely Mr. H. A. Bartlett, to the office of Executive Vice-President; (iv) to invite Mr. D. Deacon to fill the casual vacancy created among the Ordinary Elected Members.

Council Meetings

Resolved (i) to hold meetings of the Council on the following dates during 1960: February 22, March 21, April 25, May 30, June 27, July 25, August 29, September 26, October 17, November 21; (ii) to hold a meeting of the Council on Thursday, December 15, 1960; (iii) to hold the Annual General Meeting on Friday, December 16, 1960; (iv) to apply to the Over-Seas League for permission to hold the Annual General Meeting in the St. Andrews' Hall, of Over-Seas House; (v) to publish an enquiry in the Society's Journal at the appropriate time with a view to ascertaining whether there would be good support for Annual General Meetings held on Saturday afternoons instead of Friday evenings.

Constitution of Committees

Resolved (i) to reconstitute the following Committees of the Council for 1960: Contests, Exhibition, Finance and Staff, G.P.O. Liaison, Membership and Representation, R.A.E.N., Technical, TVI/BCI, V.H.F; (ii) to constitute a Scientific Studies Committee; (iii) not to reconstitute the Publications Committee.

(The names of the members appointed to serve on the Committees of the Council were set out on page 369 of the February 1960 issue of the R.S.G.B. BULLETIN.—Editor.)

QSL Manager

Resolved to re-appoint Mr. A. O. Milne to the office of QSL Manager for the year 1960.

V.H.F. Manager

Resolved to re-appoint Mr. F. G. Lambeth to the office of V.H.F. Manager for the year 1960.

Official Regional Meetings

Resolved (i) to invite the Representatives for Regions 4, 6, 9, 11 and 13 to put forward proposals for O.R.Ms. during 1960; (ii) to authorize the Representative for Region 2 to organize an O.R.M. in Redcar on June 26, 1960; (iii) to authorize the Representative for Region 12 to organize a two-day O.R.M. in Aberdeen during the weekend May 21-22, 1960; (iv) to inform the Representatives for Regions 5, 7 and 16 that, subject to any strong opinions they may hold to the contrary, it is the view of the Council that it would be inadvisable to hold an O.R.M. in their respective Regions during 1960 because a National Convention is to be held in Cambridge during September.

It was reported that the Representative for Region 3 had written to say that he would like to hold an O.R.M. in his Region on May 14, 1961.

Geneva Radio Conference

Resolved (i) to extend an invitation to eight members of the United Kingdom delegation to the Geneva Radio Conference to attend an informal dinner to meet members of the Council; (ii) that those attending the Dinner other than the invited guests shall be asked to pay for the cost of their meal, the Society providing the wines.

Amateur Radio Handbook

It was reported that the newly appointed editor of the *Handbook* (Mr. J. P. Hawker) hoped shortly to give a close estimate of publishing date.

A Guide to Amateur Radio

The stock of the current edition of *A Guide to Amateur Radio* being almost exhausted it was *Resolved* to place an order for 5,000 copies of a new and enlarged edition.

Radio Amateurs' Examination Manual

The Secretary was authorized to obtain estimates for printing a new R.S.G.B. publication to be called *The Radio Amateurs' Examination Manual*.

B.B.C. Scottish Television News

A letter was submitted from the Region 12 Representative in which he drew attention to a statement broadcast in the B.B.C. Scottish Television News Service on January 5, 1960, to the effect that certain " mystery " radio transmissions (believed to be fictitious) " had probably come from a radio ham and that this sort of thing had happened before." The calls in question were in the nature of distress calls from ships requesting help.

The Secretary was instructed to write to the B.B.C. pointing out that (i) proper editing of the news item concerned would have prevented the use of the words " radio ham"; (ii) that reports such as the one in question do great harm to the relations between radio amateurs and the public.

Reports of Committees

The Minutes of Meetings of the following Committees were submitted as Reports: R.A.E.N., November 28, 1959, Exhibition, December 15, 1959, Technical, December 18, 1959, TVI/BCI, December 21, 1959.

Resolved to receive the Reports.

It was reported that a complaint had been received from the TOPS Club regarding the operation of the Society's station at the R.S.G.B. Radio Hobbies Exhibition. It had been alleged that the station was operated on telephony on a frequency in that part of the 7 Mc/s band which is set aside for telegraphy operation. It was agreed to await a report from the Exhibition Committee.

In connection with the Report of the R.A.E.N. Committee it was decided not to accept a recommendation relating to the setting up of a Chairman's Fund.

Bulletin Deliveries

It was reported that the January issue of the Society's Journal was published several days late because of delays at the printers and at Headquarters. It was hoped that future issues would appear on time.

The meeting terminated at 10.35 p.m.

FEBRUARY 1960 MEETING

Résumé of the Minutes of the Proceedings at a Meeting of the Council of the Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Tuesday, February 23, 1960, at 6 p.m.

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

Apologies for Absence: Apologies for absence were submitted on behalf of the President (Mr. W. R. Metcalfe), who was indisposed, and Dr. R. L. Smith-Rose.

Welcome to New Member

It was reported that Mr. David Deacon (G3BCM) had agreed to fill the casual vacancy on the Council.

The Chairman extended a warm welcome to Mr. Deacon and presented him with his badge of office.

Annual General Meeting

It was reported that the St. Andrews' Hall of Over-Seas House had been reserved for the Annual General Meeting on Friday, December 16, 1960.

Cash Account

Resolved to receive the Cash Account for January 1960 as prepared and submitted by the General Secretary.

Membership

Resolved (i) to elect 91 Corporate members and 36 Associates; (ii) to grant Corporate membership to 5 Associates who had applied for transfer.

Applications for Affiliation

Resolved to grant affiliation to the following Societies and Clubs: Army Apprentices School Amateur Radio Club; East Kent Radio Society; North West V.H.F. Group; Reading Amateur Radio Club; Whitchurch (Salop) & District Radio Club.

I.A.R.U. Region I Conference

In preparation for the I.A.R.U. Region I Conference to be held in Folkestone from June 13-17, 1960, it was *Resolved* (i) to appoint Messrs. Bartlett, Milne and Newnham to meet the Region I Executive Committee during Easter weekend; (ii) to request the appropriate Committees of the Council to suggest items for inclusion in the agendas of business to be discussed at the Conference.

News Bulletin Service

It was reported that the extended New Bulletin Service would operate from Sunday, February 28, 1960.

It was agreed to invite the V.H.F. Committee to consider how best to make the subject matter of R.S.G.B. News Bulletins transmitted on 145 Mc/s more topical.

Official Regional Meetings

Resolved (i) to appoint Messrs. Metcalfe, Wade and Parker to attend an O.R.M. in Redcar on June 26, 1960; (ii) to appoint Dr. Smith-Rose, Messrs. Ingram and Clarricoats to attend an O.R.M. in Aberdeen during the weekend May 21-22, 1960; (iii) to authorize the R.Rs concerned to organize O.R.M.s in Leicester (Region 4), Oxford (Region 6) and Weymouth (Region 9) on dates to be agreed.

R.S.G.B. Bulletin Advertising Rates

To offset, in some measure, the increased cost of printing the Society's Journal (brought about as the result of the recent strike in the printing industry) it was agreed to increase advertising rates on the general basis of £5 per page with effect from July 1960.

Raffle Prizes

An amended version of a circular dealing with raffle prizes was approved for distribution and publication.

TVI/BCI Committee

The terms of the following resolution passed at the A.G.M. of the Crystal Palace & District Radio Club were noted with satisfaction:

" The Club wishes to place on record its appreciation of the work done by the R.S.G.B. TVI/BCI Committee and to thank the Chairman, Mr. David Deacon (G3BCM) and all members of the Committee for their untiring efforts for the good of British radio amateurs."

National Convention

The General Secretary reported upon a meeting which he and Mr. Caws had had with members of the Convention Organising Committee.

Resolved to confirm the action taken by the Treasurer and Secretary in requesting the Convention Committee to reserve 25 double and a small number of single rooms in Cambridge hotels.

(It had earlier been suggested that residential accommodation might be available at certain colleges for visitors to the Convention. In fact only Ridley Hall and Clare College hostel will be able to offer a limited amount of mixed and a larger amount of single accommodation.—J.C.)

Radio Show, Earls Court

It was agreed to inform Radio Industry Exhibitions Ltd. that the Society will be pleased to exhibit at the Earls Court Radio Show on the same terms and conditions as in previous years.

Reports of Committees

The Minutes of the following Committees were submitted as Reports: Finance and Staff, February 5, 1960; TVI/BCI, February 8, 1960; Contests, February 11, 1960.

Resolved (i) to receive the Reports; (ii) to accept a Recommendation in the Report of the Contests Committee appertaining to the Second Top Band Contest 1959.

The Minutes of a meeting of the Technical Development Sub-Committee held on February 3, 1960, were submitted for information.

The meeting terminated at 10.30 p.m.

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

April 24.—North Midlands Mobile Rally.
May 8.—Cheltenham Mobile Rally.
May 8.—Thanet Mobile Rally, Cliffsend, Ramsgate.
May 15.—Harwell Mobile Rally and Hamfest.
May 21-22.—Region 12 O.R.M.
May 21.—Sixth International V.H.F./U.H.F. Convention, London.
May 22.—Northern Mobile Rally at Harewood House, near Harrogate.
June 5.—Harlow Mobile Rally.
June 13-17.—Region 1 I.A.R.U. Conference, Folkestone.
June 19.—Amateur Radio Mobile Society Rally.
June 26.—Longleat Mobile Rally.
June 26.—Region 2 O.R.M. at Redcar.
July 10.—South Shields Mobile Rally.
July 10.—Worthing "Bucket and Spade" Party.
July 17.—Southern Counties Mobile Rally at the Vintage Car Museum, Beaulieu Abbey, near Southampton.
August 14.—Derby Mobile Rally.
August 24-September 3.—National Radio and Television Show, Earls Court, London.
August 28.—South Manchester Radio Club and Stockport Radio Society Joint Rally.
September 10.—British Amateur Television Club Convention.
September 15-17.—R.S.G.B. National Convention, Cambridge.
September 18. — Lincoln Hamfest and Mobile Rally.
November 23-26.—R.S.G.B. International Radio Hobbies Exhibition.
December 16.—Annual General Meeting at Over-Seas House, London, S.W.1.

REGION 1

Ainsdale.—Wednesdays, 8 p.m., 37 Hawthorne Grove, Southport.
Blackburn.—Fridays, 8 p.m., The Corporation Park Hotel, Revidge Road.
Blackpool (B. & F.A.R.S.).—Tuesdays, 8 p.m., Squires Gate Holiday Camp.
Bury (B.R.S.).—May 10 (Lecture by G2HW), George Hotel, Kay Gardens.
Chester.—Tuesdays, 8 p.m., Y.M.C.A.
Crosby (C.A.R.S.).—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 (M. & D.R.S.).—April 19, May 3, 17, 31, "The Bruce Arms," Crompton Road.
Manchester (M. & D.R.S.).—May 9, Wellington Hotel, Nicholas Croft, High Street, off Market Street.
Manchester (S.M.R.C.).—Fridays, 7.30 p.m., Ladybarn House, Mauldeth Road, Fallowfield.
Preston (P.A.R.S.).—April 26, May 10, 24, St. Paul's School, Pole Street.
Southport.—Thursdays, 8 p.m., The Esplanade.
Stockport (S.R.S.).—April 27, May 11, 25, The Blossoms Hotel, Buxton Road.
Wirral (W.A.R.S.).—April 22, May 6, 20, 7.45 p.m., 4 Hamilton Square, Birkenhead.

REGION 2

Barnsley.—April 22 (Debate), May 13 ("The Z Match," by J. A. Ward, G4JJ), 7.30 p.m., King George Hotel, Peel Street.
Bradford (B.A.R.S.).—April 26 ("The Development of Television," by D. G. Enoch, G3KLZ), May 10 ("Top Score"), May 24 ("Transistors," by D. C. Bell, B.Sc.), 7.30 p.m., Cambridge House, Little Horton Lane, Bradford 5.
Cleckheaton (S.V.A.R.S.).—April 27, May 25, 7.30 p.m., George Hotel, Cleckheaton; May 11 ("The Electron Microscope," by Dr. J. Sikorsky), Leeds University.
Halifax (H. & D.A.R.S.).—April 26 (Ragchew), May 3 (A.G.M.), 7.30 p.m., Sportsman Inn, Ogden.
Leeds (L.A.R.S.).—April 27, 7.30 p.m., Visit to Roneo Ltd.; May 4 (Film Show), Dept. of Psychology; May 11 ("Tape Recorders"), May 18 (N.F.D. Discussion), Swarthmore Education Centre, 4 Woodhouse Square, Leeds 3.
Scarborough (S.A.R.S.).—Thursdays, 7.30 p.m., Chapman's Yard, North Street.

REGION 3

Birmingham (M.A.R.S.).—April 19 ("Radio Pictures in the Sky," by K. Stevens), May 5 ("Complete Construction of 70 cm. Transmitter," by G3BA and Ron Rew), May 17 (Talk on S.S.B.), 7 p.m., Midland Institute, Paradise Street, Birmingham. **(South Birmingham).**—April 21 ("2 Metres," by G3BMN and G3ITH), Friends Meeting House, 220 Moseley Road, Birmingham 12.
Stourbridge.—May 3, 8 p.m., Brotherhood Hall, Scotts Road, Stourbridge.

REGION 4

Derby (D. & D.A.R.S.).—April 20 (Open night), Exhibition at Ripley open until April 23, April 27 (1959 in Retrospect—colour slides and film), May 4 (Surplus Sale), May 11 (Open Night), 7.30 p.m., Room No. 4, 119 Green Lane, Derby.
Derby (D.S.W. Exp. S.).—Sundays, 10.30 a.m., Thursdays, 7.30 p.m., Club Rooms, Nunsfield House, Boulton Lane, Alvaston, Derby.
Grimsby (A.R.C.).—April 14 (Talk by H. Watson, G3HTI), April 28 (Visit to be announced), May 12 (Visitors' Night), 8 p.m., R.A.F.A., Abbey Drive West, Grimsby.
Leicester (L.R.S.).—May 2 (Surplus Sale), May 16 (N.F.D. Information), 7.30 p.m., Old Hall Farm, Braunstone Lane, Leicester.
Melton Mowbray (A.R.C.).—May 12 (Shack Visit), assemble 7.30 p.m. at J. L. Bowley, G3FXP, 68 Eastfield Avenue, Melton Mowbray.
Nottingham (A.R.C.).—Tuesdays and Thursdays, 7.30 p.m., Community Centre, Woodthorpe House, Mansfield Road, Sherwood, Notts.
Newark.—May 3 (Direction Finding Equipment), 7.15 p.m., Northgate House, Newark.
Lincoln (L.S.W.C.).—April 20, May 4, 7.30 p.m., Room No. 19, Technical College, Cathedral Street, Lincoln.
Peterborough.—May 6, 7.30 p.m., Peterborough Technical College.
Retford & Worksop (N.N.R.C.).—Tuesdays, Thursdays and Fridays, 7.30 p.m., Victoria Hall, Eastgate, Worksop, Notts.

REGION 6

Cheltenham.—First Thursday in each month, 8 p.m., Great Western Hotel, Clarence Street.
Stroud.—Wednesdays, 8 p.m., Subscription Rooms, Stroud.

REGION 7

Acton, Brentford and Chiswick.—April 19, 7.30 p.m. ("My 2 Metre Rig," by G2CAJ), May 17 ("N.F.D. Briefing"), A.E.U. Rooms, 66 High Road, Chiswick.
Barnet.—April 26 (Lecture on Collins Radio Equipment), 7.30 p.m., Red Lion Hotel, Barnet.
Bexleyheath (N.K.R.S.).—April 28, May 12 (Junk Sale), 8 p.m., Congregational Hall, Bexleyheath (Nr. Clock Tower).
Croydon (S.R.C.C.).—May 10, 7.30 p.m., "Blacksmith's Arms," South End, Croydon.
Norwood and South London.—May 14, 8 p.m., Second Saturday and last Tuesday each month, 8 p.m., Windermere House, Westow Street, Crystal Palace.
Dorking & D.R.S.—Second and fourth Tuesday, 8 p.m., Star and Garter Hotel, Dorking.
Ealing.—Sundays, 11 a.m., ABC Restaurant, Ealing Broadway, W.5.
East Molesey (T.V.A.R.T.S.).—May 4 (N.F.D. Arrangements), Caernarvon Castle Hotel, Hampton Court.
Enfield & District.—April 28 ("The R.S.G.B.," by C. H. L. Edwards, G8TL), George Spicer School, Southbury Road, Enfield.
Harlow & District.—Thursdays, 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. (Closed for Easter, April 9/24.)
Ilford.—Thursdays (Lectures, 8-10 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.)
New Cross (C.A.R.S.).—Fridays, 7.30 p.m., Sundays, 11.30 a.m. (Audio Section, last Tuesday monthly), 7.30 p.m., 225 New Cross Road, London, S.E.14. April 29 (Demonstration of Products of B.C.C. Ltd., by L. Rooms, G8BU), May 13 ("Ultra High Frequency," by Geoff. Stone, G3FZL), May 15, D/F Contest, rendezvous at Green Street Green, Kent at 10.30 a.m.
Romford (R. & D.R.S.).—Tuesdays, 8.15 p.m., R.A.F.A. House, 18 Carlton Road, Romford.
Southgate, Finchley & District.—May 12, 7.30 p.m. ("The History, Development and Techniques of the Avometer," by Avo Ltd.), Arnos School, Wilmer Way, N.14.
South Kensington (C.S.R.S.).—April 19, 6 p.m., Science Museum, South Kensington.
Welwyn Garden City.—May 12 (Final Arrangements for N.F.D.), 8 p.m., I.C.I. Restaurant, Blackfan Road, Welwyn Garden City.

LONDON MEMBERS' LUNCHEON CLUB

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

at 12.30 p.m. on Fridays, May 20 and June 17, 1960.

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

REGION 8

Crawley (C.A.R.C.).—April 28 ("Aerials for Restricted Spaces," by G4ZU), May 12 (Informal), 7.30 for 8 p.m., "The Brewery Shades," Crawley High Street.
Worthing (W. & D.A.R.C.).—May 9, June 13, 8 p.m., Adult Education Centre, Union Place, Worthing.

REGION 9

Bristol.—April 22 ("Single Sideband," by T. Holbert, G3DXJ), 7.15 p.m., Carwardine's Restaurant, Baldwin Street, Bristol 1, May 5 (Mullard Film Show), Grand Hotel, Broad Street, Bristol 1.
Exeter.—Second Thursday in each month, Y.M.C.A., St. David's Hill, Exeter.
Torquay.—May 14 ("S.T.C. Valve, Characteristics," by Arthur Hook, G3CMT), 7.30 p.m., Y.M.C.A., The Castle, Torquay.
Weston-super-Mare.—Second Wednesday in each month, 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.—May 9 ("N.F.D. Final Arrangements,") 7.30 p.m., Sgts' Mess, T.A. Centre, Part Street, Cardiff.
Penarth.—April 25 ("Amateur Direction Finding," by GW3NAM), 7.30 p.m., Y.M.C.A., Penarth.

REGION 12

Aberdeen (A.A.R.S.).—April 22 ("Licence Conditions," by GM3FKS), April 29 ("Work

(Continued on page 471)

Night "), May 2 (Demonstration of Eddystone Receivers by G5JU), May 6 (" More on S.S.B.," by GM3FKS and GM3NHW), May 15 (" A Novel 144 Mc/s Receiver," by GM3ALZ), May 20 (" On the Air with GM3BSQ," followed by Grand Auction Sale), 7.30 p.m., 6 Blenheim Lane, Aberdeen. **(Aberdeen Members' Luncheon Club).**—May 3, 12.30 p.m., Royal Atheneum Restaurant. (Phone: GM3HTL, Aberdeen 34928, for reservations).

REGION 13

Edinburgh (L.R.S.).—April 21 (" Simple Receiving Equipment and Conversion of ex-W.D. Gear "), May 5 (Home-built Equipment Competition), May 19 (" Two Metre Converters,") 7.30 p.m., Y.M.C.A., 14 St. Andrew Street, Edinburgh.

REGION 14

Glasgow.—Last Friday in each month, 7.30 p.m., Christian Institute, 70 Bothwell Street, C.2.

Prestwick.—Third Sunday in each month, 7.15 p.m., Royal Hotel, Prestwick.

REGION 17

Portsmouth.—Tuesdays, 7.30 p.m., Scarrs, 183A Albert Road.

Southampton.—First Saturday in each month, 7 p.m., Prospect House (back of Gas Board showrooms), Above Bar.

Regional and Club News

Aldershot and District Amateur Radio Society.—At the A.G.M. last month, it was decided to arrange an Amateur Radio Rally during the summer, and to bring the club station into operation as soon as possible. The technical training programme will be continued in order to prepare members for the R.A.E. to be held in October. Morse practice will also be provided. It is believed that several former members of the society still live in the district and they are cordially invited to re-join. Prospective members may obtain further information regarding activities on request from the *Hon. Secretary:* A. M. Laidler, " Pondside," Sandy Lane, Churt, near Farnham, Surrey.

Amateur Radio Club of Nottingham.—The club station G3EKW is now on s.s.b. but some difficulty has been experienced with VOX operation in the crowded club room. The first two members to pass the R.A.E. and Morse test as a result of the tuition programme, Clifford Norman and Michael Birkett, should now have received their licences. The next meeting, at Woodthorpe House, Mansfield Road, Nottingham, is on April 19 when there will be Morse practice. On April 26 G3GXZ will talk about mobile equipment. *Hon. Secretary:* E. C. Weatherall, 16 Avebury Close, Clifton, Nottingham.

Blackburn Amateur Radio Club.—The following officers have been elected: *Chairman*—J. Will; *Hon. Treasurer*—E. Whittle (G3EKP); *Hon. Secretary*—K. Heap (G3NCZ), 138 New Bank Road, Blackburn. Although meetings take place on Fridays at 8 p.m. at the Corporation Hotel, Revidge Road, the club broke new ground by holding its Annual Dinner at a local fish and chip shop—at 1/9d. per head, possibly the cheapest event of its kind on record!

Bradford Amateur Radio Society.—Recent events have included a talk on " Broadcast and Television Interference " by J. C. Belcher, A.M.Brit.I.R.E. (G.P.O.) and the A.G.M. Details of future meetings are given in *Forthcoming Events*—on June 14 members are to visit Holme Moss. *Hon. Secretary:* D. M. Pratt (G3KEP), " Glenluce," Lyndale Road, Bingley, Yorks.

Bristol.—Nearly 50 members were present at the March meeting when E. C. Halliday (G3JMY) gave a talk on " Audio and R.F. Oscillators," illustrated with working demonstrations of typical oscillator circuits. On April 22, T. Holbert (G3DXJ) will be speaking about " Single Sideband " while on May 5, Mullard Ltd. will be holding their annual Film Show and discussion at the Grand Hotel in conjunction with the Group and the Television Society. Local members studying for the Radio Amateurs' Examination are invited to get in touch with G5UH, who can loan model answers to the questions set in recent years. *Hon. Secretary:* D. F. Davies (G3RQ), 51 Theresa Avenue, Bishopston, Bristol, 7.

British Two-Call Club.—D. H. Willoughby (DL2YU) has been elected *President* for 1960 and T. A. St. Johnston (G6UT) *Vice-President*. Membership is open to all U.K. amateurs who have held at least one overseas call-sign. *Hon. Secretary:* G. V. Haylock (G2DHV), 28 Longlands Road, Sidcup, Kent.

Cambridge and District Amateur Radio Club.—At the meeting to be held at the " Jolly Waterman," Chesterton Road, Cambridge, on April 29 at 7.45 p.m., there will be a series of short lecturettes entitled " You may be interested to know . . . ".

Clifton Amateur Radio Society.—The club station G3GHN is now operational on 144 Mc/s using a transmitter built by D. Read and an R.S.G.B. Two Metre Converter constructed by N. Moore. Details of meetings, which are held on Fridays at 7.30 p.m. and Sundays at 11.30 a.m., are given in *Forthcoming Events*. The first D/F contest of the season is arranged for May 15. *Hon. Secretary:* C. Bullivant (G3DIC), 25 St. Fillans Road, Catford, London, S.E.6.

Cornish Radio and Television Club.—At the March meeting at the Y.M.C.A., Falmouth, G3AET announced that a series of R.A.E.N. exercises are being held on Wednesdays at 21.00 hours and G3NKE described his " DXpedition " to the Scilly Islands. The first " Worked 25 Cornish Stations " certificate has been awarded to G3DTB of Ilminster. *Hon. Secretary:* G. Hubber (G3NVJ), 9 Cardrew Terrace, Redruth, Cornwall.

Crawley Amateur Radio Club.—At the meeting on April 28 at " The Brewery Shades," High Street, Crawley, G. A. Bird (G4ZU) will give a talk entitled " Aerials for Restricted Spaces." Visitors and prospective members will be most welcome. Plans are being made to take part in the Crawley Carnival on Whit Monday. Morse classes are held regularly. *Hon. Secretary:* R. G. B. Vaughan (G3FRV), 9 Hawkins Road, Tilgate, Crawley, Sussex.

Crosby Amateur Radio Society.—At the A.G.M. the following officers were elected: *Chairman*—D. Vaughan (G3JUA); *Hon. Treasurer*—B. J. Read (G3JDT); *Hon. Secretary*—K. R. Coates (G3IZT), 132 The Northern Road, Great Crosby, Liverpool 23; *Committee Members*—J. Garner (G3KEC), L. Howlett (G3LIP) and K. Hough (Junior Representative). Meetings at " Colonsay," Crosby Road South, Liverpool 22, have been arranged for April 19 (" Transistors " by B. J. Read, G3JDT), April 26, May 3 (Junk Sale) and May 10. Anyone interested in Amateur Radio is assured of a warm welcome.

Crystal Palace and District Radio Club.—At the A.G.M. the 1952 Committee Award was presented to David Deacon (G3BCM) for his outstanding services to U.K. radio amateurs as Chairman of the R.S.G.B. TVI/BCI Committee. The Ann Trophy was awarded to Geoff Tibbetts (G3NUE) and the Ann Cup to Dave Pearce, the first club member to be successful in the R.A.E. during the year. *Hon. Secretary:* G. M. C. Stone (G3FZL), 10 Liphook Crescent, Forest Hill, London, S.E.23.

Derby and District Amateur Radio Society.—At the Annual Dinner, held in the Irongates Grill on March 18, 82 members and friends were in attendance. In proposing the toast to the Society, C. Middleton, M.A., Director of Education for Derby, spoke of the necessity of a hobby and of the value to the community of Amateur Radio. The President, A. G. G. Melville, F.R.C.S., responded, afterwards presenting the Melville Trophy to N. J. Birkett (G3EKX), winner of the 1959 Top Band Transmitting Contest, and the G5YY Trophy to Neil Duffy (Junior Member), winner of the Receiving Section of the same Contest. The toast to the Ladies and Guests was proposed by the R.S.G.B. County Representative, T. Darn (G3FGY). Mr. Darn later projected a series of colour transparencies depicting the various activities of

Mrs. C. Drinkwater, wife of G3FNK, presenting an N.F.D. cake (complete with tent, cars, men, cows and pond) to the President of the Derby and District Amateur Radio Society, Mr. A. A. G. Melville, for a raffle in aid of the British Empire Cancer Relief campaign at the society's Annual Dinner. £5 was raised.

(Photo by M. Shardlow, A.1706.)

the society during 1959. Details of future meetings are given in *Forthcoming Events*.

Enfield and District.—At the meeting at the George Spicer School, Southbury Road, Enfield, on April 28, C. H. L. Edwards (G8TL) will be talking about the R.S.G.B. On May 26, Fred Barnes (G3AGP) will lecture on R.F. Heating. The Group will again be participating in the Enfield Show. *Area Representative:* John Gazeley (B.R.S.20533), 192 Haselbury Road, Edmonton, London, N.9.

Halifax and District Amateur Radio Society.—There was a record attendance of members and friends at a film show held on March 1. Details of future meetings are given in *Forthcoming Events*. *Hon. Secretary:* A. Robinson (G3MDW), Candy Cabin, Ogden, Halifax.

Medway Amateur Receiving and Transmitting Society.—The officers of the society for the current year are: *President*—W. E. Nutton (G6NU); *Chairman*—V. Davis (G3MSK); *Hon. Treasurer*—C. Baker (G3HQS); *Hon. Secretary*—E. N. Gunnee, 57 Saxton Street, Gillingham, Kent. New headquarters have been obtained at Riverside Buildings, Gun Wharfe Gardens, Chatham, from where it is hoped to have the club station on the air shortly.

Mitcham and District Radio Society.—At the A.G.M. the following were elected: *Chairman*—F. Young (G3NGY); *Hon. Treasurer*—D. Johnston (G3NFA); *Hon. Secretary*—M. Pharaoh (G3LCH), 1 Madeira Road, Mitcham; *Hon. Assistant Secretary*—K. Frankcom; *Committee Members*—C. MacLewee, G. Reid and D. Wallace. Plans for N.F.D. are well under way. Meetings are held at " The Canons," Madeira Road, Mitcham, on Fridays, commencing at 8 p.m.

Peterborough.—At a recent meeting of members in the Peterborough area, Zonal Representative F. K. Parker (G3FUR) of Stamford, spoke of the work done by the R.S.G.B. both nationally and internationally. A discussion on N.F.D. 1960 resulted in agreement to enter two stations, the site to be on the river bank at Old Walton. Future meetings are to be held on the first Friday in each month at Peterborough Technical College. *Town Representative:* Douglas Byrne (G3KPO), Jersey House, Eye, Peterborough.

Radio Society of Harrow.—Visitors and prospective members are cordially invited to attend meetings which are held in the Science Lab., Roxeth Manor Secondary School, Eastcote Lane, South Harrow, on Fridays at 8 p.m. On April 22, A. L. Mynett (G3HBW) will lecture on " Meteor Scatter." The Constructional Contest for the Pykett Cup will be held on May 6. *Hon. Secretary:* S. C. J. Phillips, 131 Belmont Road, Harrow Weald (Harrow 3909).

Reading Amateur Radio Club.—" Workshop Practice " will be the subject of a talk by G3GKH at the meeting in Palmer Hall, West Street, on April 30 at 7 p.m. Visitors and prospective members will be very welcome. *Hon. Secretary:* R. J. Nash (G3EJA), " Peacehaven," 9 Holybrook Road, Reading.

Stoke-on-Trent Amateur Radio Society.—Meetings are held on Mondays and Thursdays in the clubroom at the rear of the Cottage Inn, London Road, Oakhill. 1960 is Stoke-on-Trent's Jubilee Year and the call-sign GB3SOT will be used at a number of special events including the North Midlands Mobile Rally on April 24, the Industrial Exhibition in May, the Boating Rally in August and the Hobbies Exhibition in September. Details of other activities may be obtained from the *Hon. Secretary:* V. J. Reynolds (G3COJ), 90 Princes' Road, Hartshill, Stoke-on-Trent.

Torbay Amateur Radio Society.—Speaking at the society's Annual Dinner at the Abbey Lawn Hotel, Torquay, Mr. H. A. Bartlett (G5QA), R.S.G.B. Executive Vice-President, appealed to senior members to continue the good work of encouraging all s.w.l. activities. He commented on the growing strength of the society and added " The strong and virile society you have in Torquay is something of which you can be proud." The Chairman, Mr. F. D. Cawley (G2GM), responding to a toast to the society, stated that there was a record attendance of 92 and congratulated Mrs. Western (G3NQD) on attaining the first YL call ever held in the area. The Loyal Toast was proposed by the President Mr. W. B. Sydenham, B.Sc. (G5SY). Mrs. W. B. Sydenham presented the Construction Cup to Don Cawley (G2GM), the G2GM Junior Construction Cup to David Tarr, the 28 Mc/s Cup to Burn Symons (G3LKJ), the G3LHJ S.W.L. Cup to David Tarr and the G3ABU Consolation Prize to Roger Western. Tape recorded greetings from Bill Jones (G3BBF, now 5A2CV) were played back. The toastmaster and M.C. for this highly successful occasion was Edgar Crocker. *Hon. Secretary:* George Western (G3LFL) 118 Salisbury Avenue, Barton, Torquay.

Welwyn Garden City.—A switchable all-band table top transmitter won the " Stanley Harrison G3EPK Challenge Cup " for Reg Wade (G3IRW) of Hoddesdon. Second place was taken by a miniaturized 2m transmitter entered by G3BVU and third place by a 70cm converter entered by G5UM at the annual Constructors' Exhibition on March 10. The judges were three well known members from North West London, Derek Aston (G8DR), Harry Collins (G3COL) and Stanley Turner (G3BBZ).

Wirral Amateur Radio Society.—The Annual Dinner held at the Coach and Horses Hotel, Moreton, on February 26 attracted an attendance of 135 members and friends. The Council of the R.S.G.B. was represented by Mr. P. H. Wade (G2BPJ), Zone A Representative, and Mr. John Clarricoats, O.B.E. (G6CL), General Secretary. A toast to the Ladies and Guests proposed by G8BM was replied to by Miss Julia Flint, daughter of G3IIH. Mr. Clarricoats presented the 14 Mc/s N.F.D. miniature to G8BM on behalf of the Wirral B Station in N.F.D. 1959. G3CSG, Contest Officer and R.S.G.B. Area Representative, received the Region 1 Field Day Trophy from Mr. Wade and the Region 1 N.F.D. Trophy from the R.R., Mr. Basil O'Brien (G2AMV). A display of prestidigitation was given by Bob Taylor. The Dinner Committee places on record its thanks to firms who so kindly donated gifts.

Worthing and District Amateur Radio Club.—Meetings have been arranged for May 9 and June 13 at the Adult Education Centre, Union Place, Worthing, commencing at 8 p.m. Details of the programme may be obtained from the *Hon. Secretary:* P. J. Robinson (G3KFH/T), 46 Hillview Road, Worthing.

Can You Help?

- N. Guy (G2DN), 1 Byron Avenue, Coulsdon, Surrey, who would appreciate the loan for a short period of the manual for the Monitor 56 (Indicator 248 and Power Unit).
- D. W. J. Haylock (G3ADZ), 3 Norris Gardens, Havant, Hants., who wishes to buy or borrow the handbook for the type G62A wavemeter, or hear from another user able to answer a few queries? The instrument was made by Marconi for the Royal Navy in 1942 and covers 50 kc/s to 24 Mc/s.
- E. A. Simpson (ZS5TC), 90 Kings Mansions, Esplanade, Durban, South Africa, who requires information on the alignment of the R.206 receiver?

Efficiencies of the order of 95 per cent are claimed for the transistorized power supplies manufactured by Transipack, 29 Burnt Ash Hill, London, S.E.12. These supplies, which are available in either ready-built or kit form, employ multitap toroids enabling output voltages between 50 and 550 volts to be obtained in steps of 50 volts. Descriptive leaflets are available on request.

Woden Transformer Co. Ltd. of Bilston, Staffordshire, has added the Type UM0 modulation transformer to its range. The new transformer has an identical matching impedance range to others in the U.M. series but is intended for use with inputs to the p.a. of 20-25 watts. The retail price is £2 14s. 6d. A leaflet (No. W2946) giving further details may be obtained from the manufacturers.

An all-transistor v.h.f. signal generator is now being manufactured by R.E.E. Telecommunications Ltd. of Telecomm Works, Market Square, Crewkerne, Somerset. Three types are available: model A covers 40-70 Mc/s, model B 100-150 Mc/s while model C is a two-band (70-72 Mc/s and 85-87 Mc/s) version intended for use in servicing a.m. narrow band v.h.f. mobile receivers. Two transistor crystal calibrators have also been added to the firm's range: model A will give check points up to 30 Mc/s using a crystal in the range 400 kc/s to 2 Mc/s; model B utilizes a crystal in the range 9-18 Mc/s and gives check points up to 180 Mc/s.

Several additions to the Heathkit range have been announced by Daystrom Ltd. of Gloucester, including a service oscilloscope Model OS-1 using a 2¾ in. c.r.t., a multirange testmeter with a sensitivity of 20,000 ohms per volt, a single channel high fidelity amplifier using p.p. EL84's in an altra-linear circuit and a general purpose power unit supplying 6·3 volt at 3 amp. and h.t. of 250-300 volt at 90 mA, 170-220 volt at 30 mA and 150-200 volt at 10 mA.

R.A.E. Scholarships

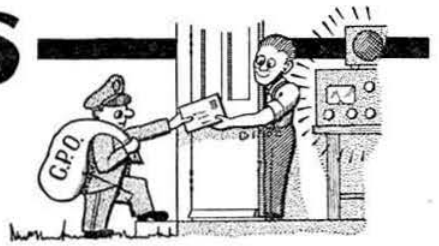
THE 404 Signal Squadron (Press Communications), Army Emergency Reserve, is offering 12 R.A.E. scholarships to men wishing to become radio amateurs. The scheme is open to fit men between 18 and 40 who are prepared to enlist in the Squadron for a period of three years. When the successful candidates attend the unit's annual camp in September, they will be given an intensive course in basic radio and electrical theory, plus a basic Morse course. They will continue their studies by means of a free correspondence course. At the camp to be held in April 1961, they will be given an advanced theory course specifically designed for R.A.E. candidates as well as more advanced Morse training. Full details are available from Major J. A. Bladon (G3FDU), "Madresfield," Jack Lane, Davenham, Northwich, Cheshire.

British Sound Recording Association Audio Fair Convention

THE British Sound Recording Association is arranging a Convention on Saturday, April 23, at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, in conjunction with the London Audio Fair. Morning, afternoon and evening sessions will be held and the papers to be presented will survey post-war developments in tape and disc recording, pick-up design and cinema sound systems. They will be extensively illustrated and demonstrations will be provided.

Registration will cost 5s. for B.S.R.A. members and 10s. for non-members. Full details can be obtained from S. W. Stevens-Stratten, "Greenways," 40 Fairfield Way, Ewell, Surrey.

NEW CALLS



THE following call-signs have been issued by the Post Office since the 1960 Edition of the *R.S.G.B. Amateur Radio Call Book* closed for press last autumn. Further additions to the Call-sign Record will be published from time to time under this heading. In the meantime the Society extends a warm welcome to all who have recently been licensed.

England

G3NSW R. E. Kay (ex-B.R.S.20982), 7 Lea Drive, Blackley, Manchester, 9.
G3NSX W. Pearson (ex-B.R.S.21972), 9 Long Lane, Limbrick, Chorley, Lancs.
G3NSY F. J. Hall (ex-B.R.S.22181), Stourbridge Lodge, Prestwood, Stourbridge, Worcs.
G3NSZ D. Roberts, 4 Hopfield Road, Moreton, Wirral, Cheshire.
G3NTA/T G. A. Couzens (ex-B.R.S.15494), 16 Marine Park, West Kirby, Wirral, Cheshire.
G3NTB D. N. Staines, 6 Hollywood Croft, Great Barr, Birmingham, 22A.
G3NTC J. Oldham (ex-B.R.S.21213), 20 Victoria Street, Ashton-under-Lyne, Lancs.
G3NTD A. Marsden (ex-B.R.S.21849), 4 Bader Rise, Mattersey Thorpe, Doncaster, Yorks.
G3NTE J. Martin, 53 Pembridge Villas, Notting Hill Gate, London, W.11.
G3NTF/T I. Neary, 65 Vicarage Road, Ashton-under-Lyne, Lancs.
G3NTG C. E. Griffin, Severn Brow, Oldbury, Bridgnorth, Salop.
G3NTH D. S. Davison (ex-B.R.S.21940), Officers Mess, R.A.F. Bridgnorth, Salop.
G3NTI R. Blain (ex-A.1765), 1 Mill Bank Ness, Wirral, Cheshire.
G3NTJ Blackburn Amateur Radio Club, c/o F. W. Bird, Corporation Park Hotel, Whinney Heights, Blackburn, Lancs.
G3NTM W. T. Brown, 31 Beaufort Road, Kingston-on-Thames, Surrey.
G3NTN A. M. O. Veale, 22 Basing Hill, London, N.W.11.
G3NTP A. Johnson, 16 Lonsdale Close, Hillingdon, Uxbridge, Middx.
G3NTQ P. E. Barker, 80 Gainsborough Avenue, Manor Park, London, E.12.
G3NTR C. Bowman, 9 Prince Street, Newport, Mon.
G3NTS The Ariel Radio Club (B.B.C. Club), Television Section, c/o A. Wright, B.B.C. Television, Woodstock Grove, London, W.12.
G3NTT/T J. G. Denny, 40 Canada Road, Woolston, Southampton, Hants.
G3NTU P. J. Davis, 45 Broad Street, Bridgtown, Cannock, Staffs.
G3NTV B. E. Gillingwater, 79 Lancaster Road, Great Yarmouth, Norfolk.
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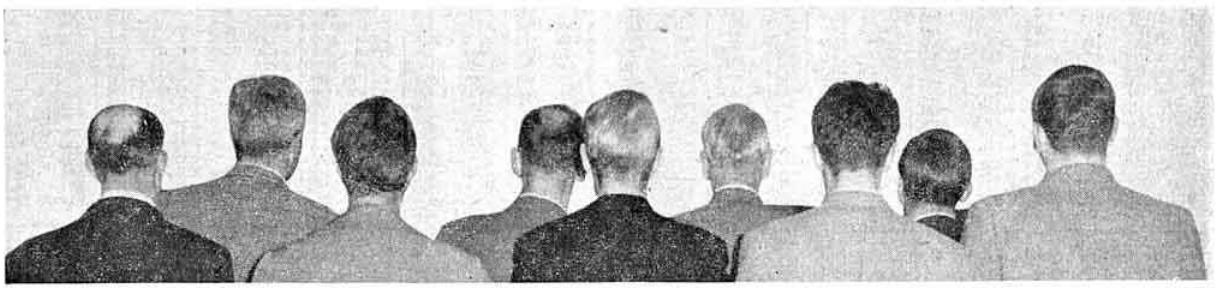

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