

R S G B

JULY, 1959

BULLETIN

2/6 Monthly

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

VOL. 35, NO. 1

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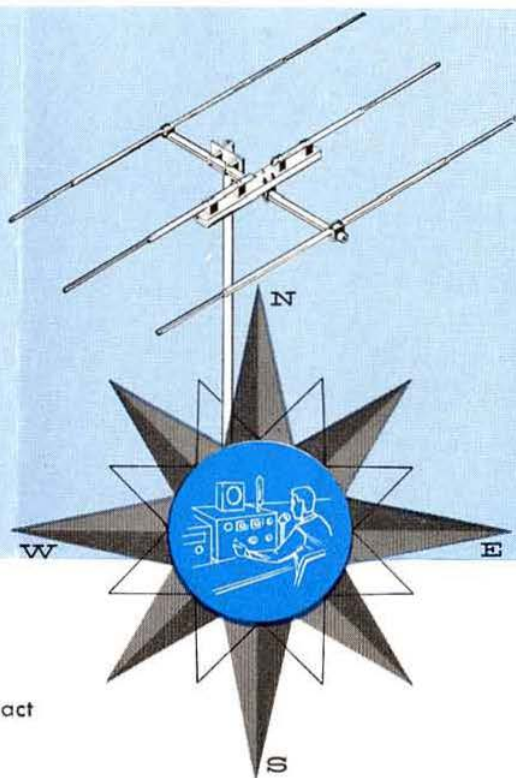
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19, Queen's Road,
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Cambs.

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Yours faithfully -
D.E. Law
D.E. Law (G3IBR)

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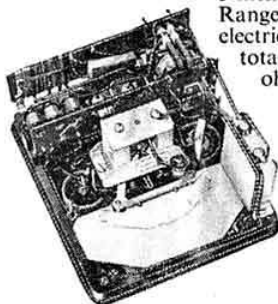
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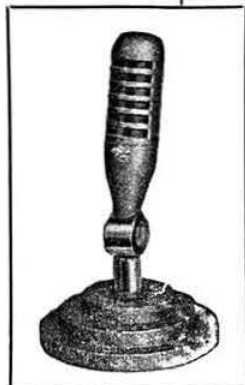
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R.S.G.B. BULLETIN

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by

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Current Comment

discusses topics of the day



The Scheme of Representation

FOR more than 30 years the activities of the Society in the field have been organized by voluntary effort. In the early days the Society boasted only six District Representatives but as the membership increased so also did the need for more adequate representation.

The present three-tiered structure has operated for the past ten years and notwithstanding certain limitations it has much to commend it. The "king pin" in the scheme is the Town or Area Representative, for no matter how enthusiastic are the Regional and County representatives, the success or otherwise of a particular group depends very largely on the man who is responsible for local activities.

Before the war Amateur Radio was in the doldrums during the summer months. Once National Field Day had passed nothing very much ever happened until the middle of September. Then came Convention and a revival of interest. Today, the picture has changed completely, largely as the result of the introduction of the mobile licence and the much greater interest which is being shown in Direction Finding events.

The summer months are now among the busiest in the R.S.G.B. Calendar thanks to the enthusiasm of Regional, County and Town Representatives who organize events of all kinds.

Throughout this summer, opportunities galore will occur to introduce newcomers to Amateur Radio. The May Radio Amateurs' Examination is now a thing of the past and the twelve hundred and more who studied and swotted in readiness for the great day should now have the slip of paper telling them whether they have passed or failed. Those who have passed have still to overcome the hurdle of the Morse Test—but with the R.A.E. "in the bag" that obstacle should be easier to surmount.

By mid-August several hundred newcomers will be on the air. Many of them will already be members of the R.S.G.B. but others may not. It is here that R.S.G.B. representatives can play a useful part. As soon as a new call appears the enthusiastic representative will endeavour to make a personal contact and if the newcomer is not a member of the Society he will be invited to attend the next meeting of the group and to take part in local activities.

R.S.G.B. membership at 30/- a year, compared with the 43/6 that has to be paid for a year's subscription

to QST, is good value for money. The newly licensed amateur, who is reasonably active, will save more than 30/- a year by using the R.S.G.B. QSL service. In addition to the free QSL service—which is a privilege of membership—he will receive the Society's Journal each month. He will also be able to take part in various contests arranged by the Society and qualify for certificates and awards.

The Scheme of Representation depends for its ultimate success on every representative "pulling his weight." Regional and County Representatives have the means within their power of boosting Amateur Radio within their Region or County but this will only be achieved where there is the maximum co-operation between the representatives and their members.

Recently it has been the privilege of delegates of the Council to attend Official Regional Meetings in Blackpool and Bangor, Northern Ireland. The pattern of the two meetings differed considerably but the aim of both was fully achieved. From all parts of the respective Regions members came to join in the occasion. The business session at an O.R.M. is designed to allow members to speak their mind. It also enables the representatives of the Council to discuss matters of general interest to the membership and to answer questions on a wide variety of subjects. The work which goes into the organization of an O.R.M. is very considerable and although the results, judged on a numerical basis, are sometimes below expectation, there is no doubt that such functions play an important part in the life of the Society.

The cost of sending official delegates to O.R.M.s and similar functions can be regarded as money spent in advertizing the work of the Society. The fact that civic support is now frequently given to official R.S.G.B. functions, and that the local, and often the national, press publishes reports of O.R.M.s, and the like is an indication of the interest which Amateur Radio arouses.

Sometime during the next few months the membership of the Society will pass the 10,000 mark. The importance of building up and holding a large membership should be obvious to everyone, because only by an increase in membership will it be possible to extend existing facilities. A 50 per cent increase of membership within the next five years should be well within the bounds of possibility. The Scheme of Representation, if it operates properly in every part of the British Isles, should assist materially to bring about that increase.

J. C.

A Variable Output Power Supply

By W. E. THOMPSON, A.M.I.P.R.E. (G3MQT)*

THE power supply to be described was displayed in the Home Constructors' section of the Society's stand at the 1958 R.S.G.B. Radio Hobbies Exhibition, where it attracted a certain amount of interest and inspection. Requests for details of its design and construction have prompted this brief article. It was designed two years ago as a bench unit which could be used to supply power for a few test instruments that had been made, and as a ready means of providing h.t. and l.t. supplies for various hook-ups for which it would not be economical to make built-in power units. This simple unit can be very useful for testing out prototype equipment, since the variable output available enables the operation of such apparatus to be studied under different h.t. supply conditions.

The basis of the design is a circuit given by A. H. B. Walker in the September 1952 issue of *Wireless World*. In that circuit, PX.25 triodes were used. Their low anode a.c. resistance produced good regulation over a wide range of output voltage settings. Although it was realized that the higher anode a.c. resistance of triode-connected pentodes would degrade the regulation, it was decided to investigate the possibilities of using KT.66 beam tetrodes since they are a current equipment type and available fairly cheaply. The saving on valves is certainly kinder to slender pockets, but the resulting cheapening of equipment cost is reflected to some extent in performance. However, it was found that KT.66 valves gave results suitable to the particular requirements in mind.

With the exception of the shunt for the milliammeter, all components are readily procurable. The meter shunt is not difficult to make, provided some care and patience are used in adjusting it to its correct values. Even though smoothing chokes could have been purchased, the writer produced his own from available spare material, and, as will be mentioned later, a standard mains transformer was slightly modified too.

Circuit Description

The circuit of the power unit is given in Fig. 1. V1 and V2 are triode-connected KT.66s operating in a conventional full-wave rectifier circuit. Adjustment of output voltage is achieved by altering the grid-cathode potential of these valves. The (positive) control voltage is applied via the variable resistor R4 and is derived from the half-wave rectifying circuit comprising the metal rectifier MR and smoothing filter C4-R5-C5. The a.c. input is obtained from one half of the h.t.

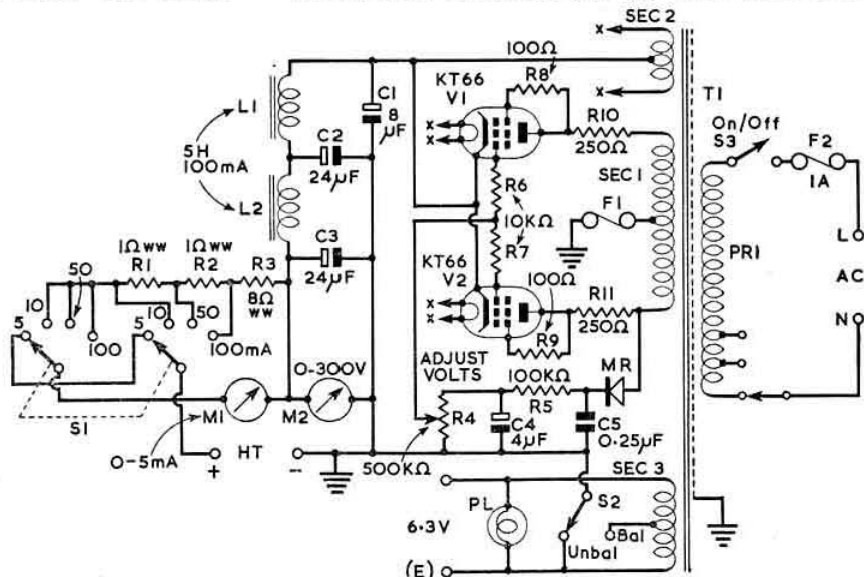
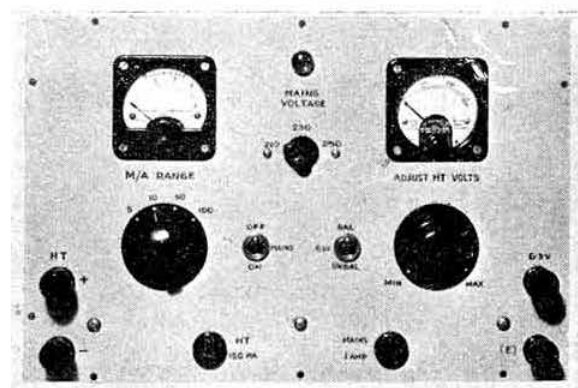


Fig. 1. Circuit diagram of the variable output power unit described in the text.



Front panel view of the variable output power supply described by G3MQT.

winding on the mains transformer T1. As the metal rectifier should have a high p.i.v. rating, it is recommended that the type specified should be used.

Rectified h.t. is smoothed by the two-stage inductance-capacitance filter C1-L1-C2-L2-C3; output voltage, measured by the voltmeter M2, can be adjusted by R4 to values between 50 volts and 300 volts depending upon the current being supplied to the load. Currents up to about 100 mA can be drawn. The regulation curves presented in Fig. 2 show the ranges of voltages and currents at some settings of R4 for which the unit can cater. The current actually delivered to the load is measured by the milliammeter M1. Switch S1 and the universal shunt made up of R1, R2 and R3 provide ranges of 5, 10, 50, and 100 mA on the basic 5 mA meter.

Tendencies to parasitic oscillation are prevented by the grid stoppers R6 and R7 and screen stoppers R8 and R9. Surge limiters R10 and R11 are necessary to make up a minimum of about 450 ohms series resistance in the anodes of the beam tetrodes. The method of deriving values for these resistors is dealt with in Appendix A. The valve manufacturers recommend that 450 ohms anode series

* 8 Coventry Road, St. Leonards-on-Sea, Sussex.

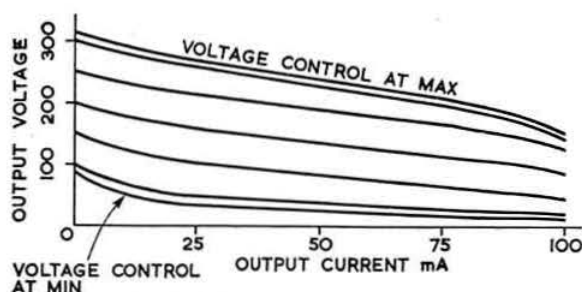


Fig. 2. Curves showing the regulation of the power supply.

resistance is desirable when KT.66s are used in this circuit application, and that the reservoir capacitor C1 should not exceed 8 μ F to prevent excessive surge currents being developed.

A 6.3 volt 3 amp. winding on the mains transformer T1 is brought out to terminals on the front panel. The writer used a Premier Radio type SP.350A mains transformer, which has a 5 volt winding on the outside of the coil. This was removed, and a new winding put on of 22 turns, centre-tapped, of 20 s.w.g. enamelled wire. Toggle switch S2 shifts the earthing point to either the centre tap or to one end of the heater winding, thereby enabling either a balanced or unbalanced I.T. feed to be provided at will. Because of this feature the pilot lamp PL must have both poles insulated from the front panel.

Meters and Shunts

Both meters are surplus equipment 2 in. square flush-mounting moving coil movements. The 5 mA meter seen in the photographs was marked 7 ohms internal resistance, but was found to be 6.56 ohms. In order that the shunt resistors R1, R2 and R3 could be made easily calculated values, the

COMPONENTS LIST

- C1, 8 μ F, 450 volts working electrolytic.
 C2, 3, 24 μ F, 450 volts working electrolytic (8 + 16 μ F).
 C4, 4 μ F electrolytic (2 \times 8 μ F, 450 volts working in series).
 C5, 0.25 μ F paper (2 \times 0.5 μ F, 350 volts working in series).
 L1, 2, 5H 100 mA choke (see text).
 M1, 0-5 mA 2 in. m.c. meter.
 M2, 0-300 volts, 2 in. m.c. meter.
 MR, SenTerCel K3/25 metal rectifier.
 PL, 6.3 volt lamp and insulated holder.
 R1, 2, 1 ohm, wire wound (see text).
 R3, 8 ohms, wire wound (see text).
 R4, 500 K ohms, carbon pot., linear.
 R5, 100 K ohms, $\frac{1}{2}$ watt carbon.
 R6, 7, 10 K ohms, $\frac{1}{2}$ watt carbon.
 R8, 9, 100 ohms, $\frac{1}{2}$ watt carbon.
 R10, 11, 250 ohms, 5 watts, wire wound (see text).
 S1, 2 pole, 4 way miniature switch.
 S2, 1 pole, 2 way toggle switch.
 S3, On-off toggle switch.
 F1, 150 mA panel mounted fuse.
 F2, 1 amp., panel mounted fuse.
 T1, Mains transformer, 0-250 volts, tapped and screened primary, 350-0-350 volt, 100 mA, 6.3 volts 3 amp., 6.3 volts 3 amp. secondaries. Premier Radio SP.350A modified.
 V1, 2, KT.66 (or CV.1075).

Miscellaneous

- 2 Knobs (Bulgin K.370).
 2 Escutcheons (Bulgin K.371).
 4 Terminals (Belling-Lee L.1001/1W).
 1 Mains voltage adjustment panel.
 2 I.O. valveholders.
 11 Grommets.
 1 3-pair tag panel for shunts.
 4 Tag strips (Radiospares, see text).

internal resistance of this meter was purposely increased to 10 ohms by adding extra resistance. About 12 in. of 34 s.w.g. E & S.S.C. Eureka wire was spiralled and placed inside the meter case, and then adjusted to the required value of resistance.

It is by no means essential that the internal resistance of the meter shall be measured to the two places of decimals quoted here as a matter of interest, but if facilities are available for doing so it follows that the extra resistance could be adjusted so that the total internal resistance of the meter is made 10 ohms to the same degree of accuracy. The method adopted by the writer to make his measurements was first to remove the magnet from the meter movement and place a keeper across its poles. The resistance of the moving coil was then measured with a bridge megger on its $\div 100$ range, and the approximate length of resistance wire calculated to raise this reading to 10 ohms. With the extra resistance then in circuit it was an easy matter to adjust the length of wire so that the bridge megger indicated a balance for 10.00 ohms.

Removal of the magnet greatly assists an operation of this kind, for three reasons: (a) a bridge megger should normally be rotated faster than its clutch slip-speed when measuring reactive components, so the absence of a strong magnetic field reduces the moving coil system to one which is almost entirely resistive; (b) the bridge megger can now be rotated at very low speed so that only a small current is passed through the moving coil, thus preventing possible damage to it; (c) the movement will remain stationary since there is no field for developing a turning torque.

If a bridge megger is not available for the purpose of adjusting the extra resistance, it is possible to read 10 ohms accurately enough on the lowest ohms range of a good multi-range test meter. Even so, removing the magnet from the meter under test can still obviate the distressing spectacle of the needle being cruelly pounded against its stop!

As shown in Appendix B, values for the universal shunt now evaluate to 8 ohms for R1 and 1 ohm each for R2 and R3. R1 was made from about 25 in. of 34 s.w.g. E & S.S.C. Eureka wire, while R2 and R3 were made from 9 $\frac{1}{2}$ in. lengths of 28 s.w.g. Eureka. These wires were made into spirals and mounted on a 3 pair tag panel, which in turn was mounted on the terminals of meter M1.

Before adjustments to the shunt are undertaken the 5 mA movement should be checked for accuracy in linearity and full-scale deflection readings. If correction is necessary the position of the magnetic shunt in the movement can be altered. This is a small piece of soft iron (usually tapered in shape) bridging the lower gap of the pole pieces surrounding

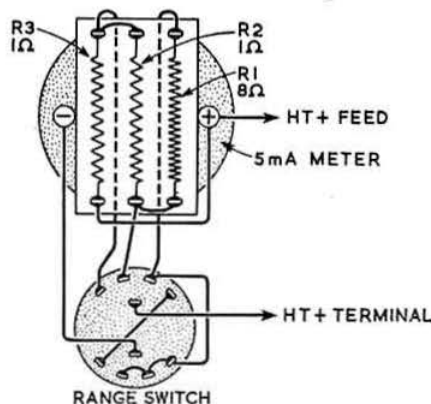


Fig. 3. Wiring of the meter shunts and range switch.

the moving coil, and held in place by a clamping screw. With 5 mA passing through the meter its pointer should register exactly full-scale deflection. If it reads either above or below this calibration mark, it can be brought on to it by moving the magnetic shunt one way or the other across the polepiece gap. Linearity can be verified by noting that the meter reads correctly for values between zero and full-scale deflection. With the full-scale deflection set up properly the pointer should now indicate intermediate values to the degree of accuracy which can be expected in this class of meter. Slight errors are to be regarded as inevitable, but they can be "averaged" over the whole scale by suitable adjustment of the magnetic shunt.

Correct adjustment of each resistor in the shunt is necessary, using a reference meter of known accuracy. Adjustment of any one resistor in the shunt will affect readings on other ranges, so frequent checks are necessary to achieve overall accuracy. Small increases of shunt resistance can be made by slight stretching of the resistance wire. To decrease the resistance by small amounts, solder can be run along the wires for a short distance. Critical adjustment can be made in this way, but care should be taken to allow solder and warmed parts to cool thoroughly before making checks on calibration.

If these adjustments to the shunt are made with the associated components wired up "bread-board" fashion with

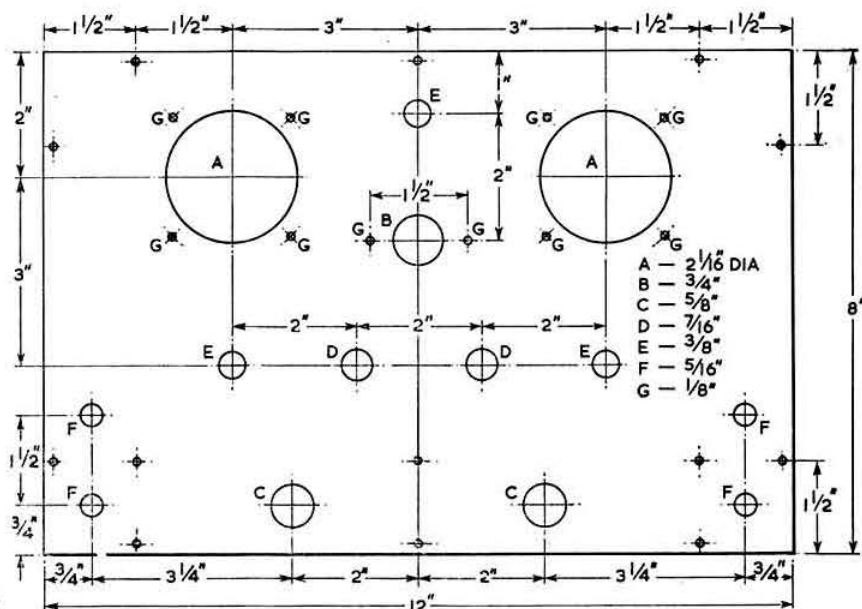


Fig. 4. Drilling details for the front panel.

fairly long leads, calibrations are almost certainly to be upset when the parts are mounted and wired up permanently, due to changed lengths of leads. Therefore, mount the meter, shunt resistors and range switch on the front panel, and wire them up permanently in the first instance as shown in Fig. 6.

The voltmeter M2 is a 1 mA movement scaled 0-300 volts, and needs no alteration. The one used by the writer bears the services reference number 10A/19823 and has a full circular glass. Other movements with a segmental glass like that on the milliammeter have been seen with the same reference number on them, but have been found to have a 5 mA basic movement. It is thus likely that some constructors may prefer to obtain two 5 mA meters to secure symmetry of instruments on the front panel.

Construction

Layout of parts is not critical nor is the wiring, so any convenient method of construction can be adopted, but for those who might wish to follow the original design, the photographs of the unit can serve for guidance. Details of front panel and chassis drillings are shown in Figs. 4 and 5 respectively. A metal case, not shown in the photographs, was made from sheet tinplate in the form of an open box. Front and rear panels, and the chassis, were made of 16 s.w.g. aluminium sheet, the rear panel serving to support the rear of the chassis. Suitable ventilation should be provided, and to assist

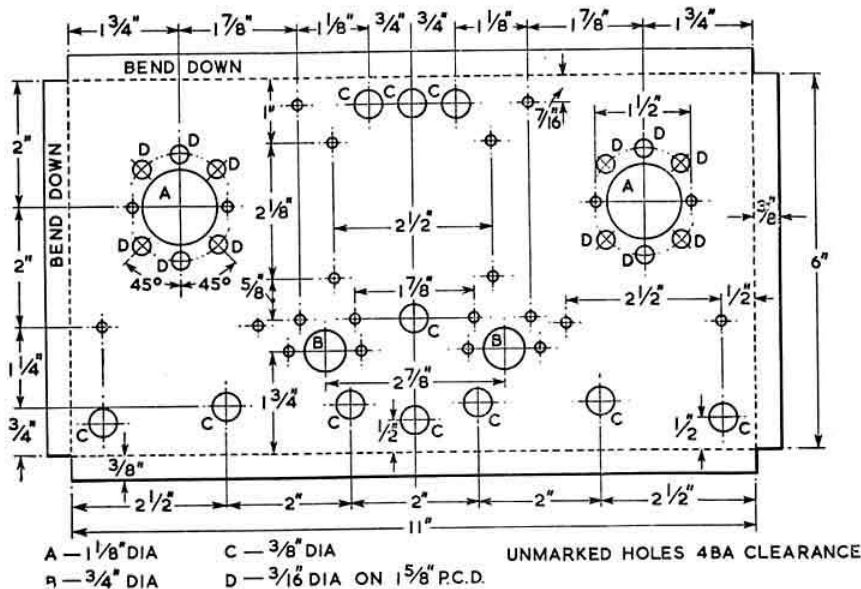


Fig. 5. Drilling details for the chassis.

this a few holes around the bases of the two valves are needed.

The case and panels can be finished in enamel or sprayed with cellulose. Suitable transfers for the legends are obtainable from Data Publications Ltd., 57 Maida Vale, London, W.9, or the characters may be sign-written by hand.

Tag strips for mounting components under the chassis as shown in Fig. 6 are pieces cut from Radiospares 28-way strips. Individual tags are prised off and remounted to produce these special strips which might not otherwise be obtainable.

When wiring up the power unit it is easier to treat the front panel and chassis as two separate items. Mount components on them and wire them up as far as possible, leaving sufficient length on leads which must run from panel to chassis. These leads can then be connected when the two parts are finally assembled.

Smoothing Chokes L1-L2

Those who want to wind their own chokes can use spare or faulty speaker output transformers for the purpose. In the writer's case, two such items were on hand, having $\frac{1}{8}$ in. waste-free stampings and cores with square-section centre limbs. The bobbins were wound full with 36 s.w.g. enamelled wire, giving 3,000 to 3,200 turns. The stampings were reassembled with all the "Es" on one side and all the "Is" on the other, and a 7mm air gap provided between abutting faces of stacked laminations. A popular brand of cigarette packet was found to have the required thickness!

Acknowledgement

The writer wishes to express thanks to his colleague J. L. Warne for preparing the photographs used to illustrate this article.

Appendix A

The anode series resistance for the rectifier anodes is made up partly by the effective series resistance R_t due to the d.c. resistance of the mains transformer, the value being:

$$R_t = R_s + n^2 R_p$$

where R_s = d.c. resistance of half-secondary,

R_p = d.c. resistance of primary,

n = turns ratio.

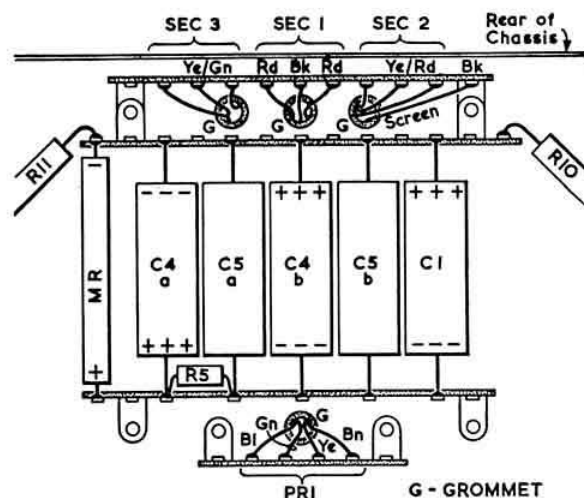
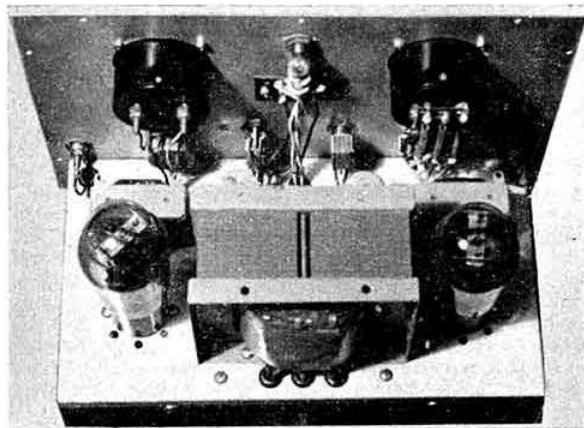


Fig. 6. Mounting of the tag strips, under-chassis components and transformer terminations.



This view shows the arrangement of the main components above the chassis.

The mains transformer in the instrument depicted produces 350 volts across each half-secondary, and has a resistance of 150 ohms for each section of the h.t. winding. It is normally used on 210 volt mains, and the primary resistance at this tapping measures 16 ohms. The turns ratio is therefore:

$$n = \frac{350}{210} = 1.67$$

The effective resistance due to the transformer is thus:

$$R_t = 150 + (1.67^2 \times 16) = 194.5 \text{ ohms.}$$

The value for R_{10} or R_{11} is therefore:

$$R = 450 - 194.5 = 255.5 \text{ ohms.}$$

Resistances of 250 ohms were chosen as the nearest standard values.

Appendix B

The value of a milliammeter shunt R_s in ohms is given by:

$$R_s = \frac{R_m}{n - 1}$$

where R_m = internal resistance of meter,
 n = range multiplying factor.

In this case, R_m has been adjusted to 10 ohms, and the basic range of the meter is 5 mA. The values of resistances comprising the universal shunt are derived as follows:

For the 10 mA range, when $n = 2$,

$$R_1 + R_2 + R_3 = 10 \quad \dots (a)$$

For the 50 mA range, when $n = 10$,

$$R_2 + R_3 = \frac{10 + R_1}{9} \quad \dots (b)$$

For the 100 mA range, when $n = 20$,

$$R_3 = \frac{10 + R_1 + R_2}{19} \quad \dots (c)$$

Re-arranging (b), $9R_2 + 9R_3 - R_1 = 10$

Adding (a) gives $10R_2 + 10R_3 = 20$

$$\text{so } R_2 + R_3 = 2 \quad \dots (d)$$

Subtracting (d) from (a), gives $R_1 = 8 \text{ ohms}$

Re-arranging (c), $19R_3 - R_2 = 18$

Adding (d) gives $20R_3 = 20$

$$\text{so } R_3 = 1 \text{ ohm}$$

Also, from (d) $R_2 + 1 = 2$

$$\text{so } R_2 = 1 \text{ ohm}$$

The required values are therefore

$$R_1 = 8 \text{ ohms and } R_2 = R_3 = 1 \text{ ohm.}$$

The Galvanized Ground-Plane

By S. J. LLOYD (VK3AST)*

THE conventional ground-plane aerial makes use of horizontal radial wires to form an electrical "ground" for two reasons: to allow the system to be raised above the level of the surrounding terrain, and because the electrical characteristics of the natural earth are unpredictable and generally imperfect. The use of wire, rod, or tube radials is merely for constructional convenience and a continuous conducting sheet is, in fact, more efficient. For the h.f. bands, however, a solid plane is too costly to erect specially for the job: a flat or low pitched roof of galvanized iron, on the other hand, offers an ideal "ground-plane," provided that it is at least half a wavelength across.

Roof Installation

Any amateur fortunate enough to have his shack on the top floor of a building with a flat metal roof has only to

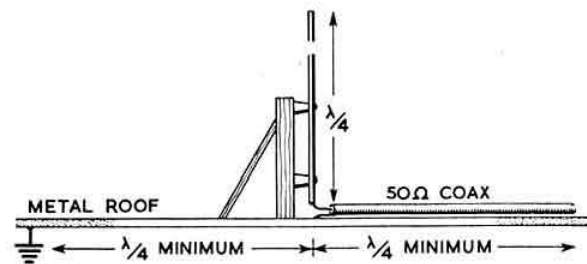


Fig. 1. Simplest form of ground-plane aerial for mounting on a metal roof.

erect a quarter wave vertical whip, and feed it suitably to have a highly efficient ground-plane aerial. For best results the whip should be in the centre of the roof: if it has to be offset at the side or the end the system will still work, but the desired low angle radiation will not necessarily be obtained in all directions.

In the case of a galvanized roof, particularly an old one, it is advisable to go over the whole area with a hammer and make sure that all fixing nails are driven firmly home. If the galvanizing shows signs of corrosion or oxidation, or if the sheets were painted before erection, the contact resistance should be checked with an ohmmeter between adjacent sheets, and the contact improved if necessary. Lead or copper roofs are generally soldered at the joints and present no problem in this respect.

The simplest method of feeding the whip is that shown in Fig. 1; 50 ohm coaxial cable, of any length, is connected directly to the bottom of the radiator with its outer conductor bonded to the roof only at a point immediately under the whip. The impedance at this point is actually less than 50 ohms, but is likely to be near enough for practical purposes.

Three other ways of feeding a self-supporting whip are shown in Fig. 2. In Fig. 2A a coaxial or parallel-conductor line of any characteristic impedance is tapped up the radiator to a suitable matching point: the whip in this case is bonded to the metal of the roof, and the tapping point must be found by trial and error, preferably with the aid of an s.w.r. bridge. In Fig. 2B a feeder of any type is shown link coupled to a matching circuit at the base of the aerial, the

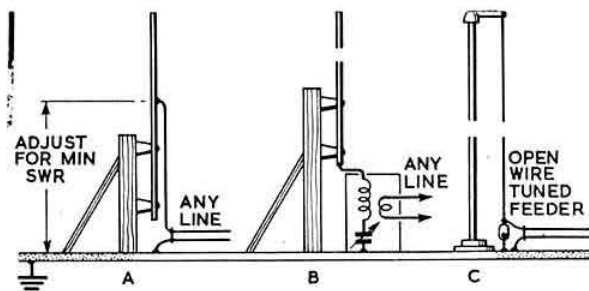


Fig. 2. Methods of feeding self-supporting ground-plane whips.

tuned circuit being pre-set and enclosed in a weatherproof container. The tuned circuit constants are not critical, but must of course resonate at the frequency in use: the coil inductance should be somewhat larger than that of the transmitter tank coil. The link winding should have a reactance of the same order as the feeder impedance, and the coupling adjusted for minimum s.w.r. Fig. 2C shows a folded radiator fed directly with a tuned feeder: both this arrangement and that of Fig. 2A have the advantage that the whip is earthed at the base, and therefore no supporting insulators are required. In Fig. 2C the tuned feeder can be replaced by a non-resonant line with or without matching stubs, according to the feed-point impedance: the latter depends on element diameter and spacing, and can be calculated from the chart in the 1958 *ARRL Handbook*, p.377, Fig. 14-42.

In some situations it may be convenient to suspend the vertical element from the centre of a triatic stretched between two masts. Three simple ways to feed such an arrangement are shown in Fig. 3, although the methods of Figs. 2A and 2B could also be used.

In Fig. 3B the spacing between the wires is immaterial if they are both the same diameter: in Fig. 3C the spacing affects the feed impedance to some extent, and they should be as close together as mechanical considerations allow.

Window Mounting

If the shack can be located directly under the aerial, transmission line feed can be dispensed with, and the radiator connected immediately to a tuning unit or a pi coupler. This is most likely to be practicable where the whip is mounted at the edge of the roof over a window opening into the shack: such an arrangement that has been used with success is shown in Fig. 4. Here the whip is extended downwards in the form of a flexible lead-in and brought into the shack to a tuning unit situated close to the window. Provided that the portion appearing above the roof level is a quarter wavelength, and the lead-in section is short in comparison with it, true ground-plane operation will be achieved on the band for which it is designed: on other

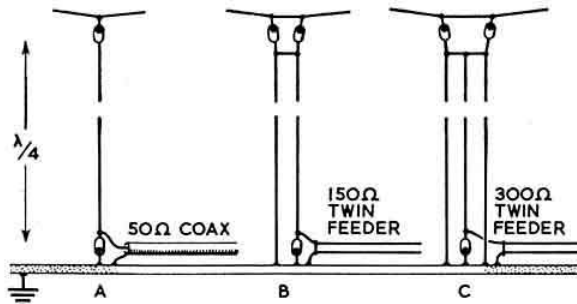


Fig. 3. Ground-plane aerials using suspended vertical radiators.

* Surg. Lt.-Cdr. S. J. Lloyd, R.A.N., Flinders Naval Depot, Victoria, Australia.

bands the system can be used as a random-length vertical radiator by suitable adjustment of the aerial tuning unit. The impedance at the feed point, and hence the method of coupling to the tuning unit, will depend on the length of wire below the roof, and must be found by experiment.

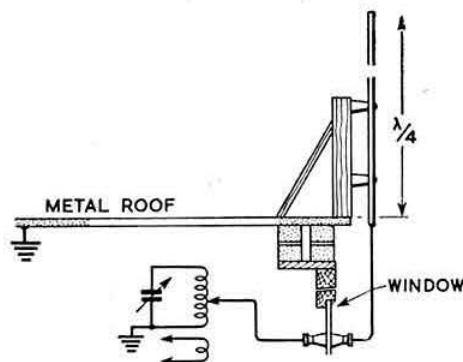


Fig. 4. Arrangement of a ground-plane aerial mounted above a window.

Multiband Ground-plane

A multiband ground-plane system is shown in Fig. 5. Three vertical quarter-wave wires, one for each band, are suspended from a triatic (which may conveniently form an end-fed aerial for the lower frequency bands), and are all connected to the centre conductor of a 50 ohm coaxial feeder. They may be spaced about a foot apart at the top. Only one of these wires will accept power from the feeder on each band, the others presenting a high impedance at the feed point. It is not satisfactory to include a 7 Mc/s element, unless 21 Mc/s is omitted: quarter wave at the former frequency is three-quarter wave at the latter, and would therefore draw power on that band as well, but the radiation pattern would not be that of a ground-plane aerial.

If a horizontal aerial is used to support the vertical radiators, some parasitic excitation of the former is possible. This has not been found to cause any trouble, however, provided that its feeder is grounded when not in use. If much of the radiated power is absorbed by this aerial, as indicated by a significant r.f. current in the feeder, it can be detuned by inserting a series capacitance or inductance in the earth lead.

Radials

In default of a suitable metal roof, all the systems shown in Figs. 1, 2, and 3 can be used with the conventional radial wires; each radial should be a quarter wave long and the whole assembly elevated as high as mechanical considerations will allow. In an open situation where the ground is flat, however, elevation of the system may not be necessary, and

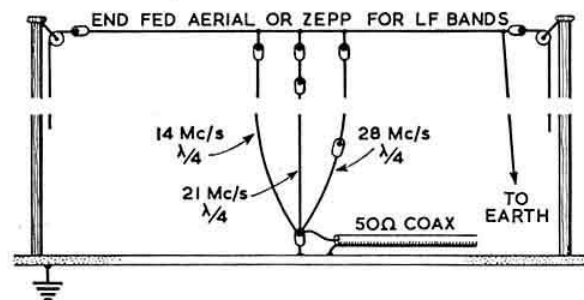


Fig. 5. Multiband ground-plane aerial.

the radials can then be buried a few inches below the surface: they should not be left out, because the conductivity of natural soil cannot be relied upon. In the case of the multi-band version the radials should be cut for the lowest frequency band to be catered for. A suitable method of anchoring the vertical radiators is shown in Fig. 6.

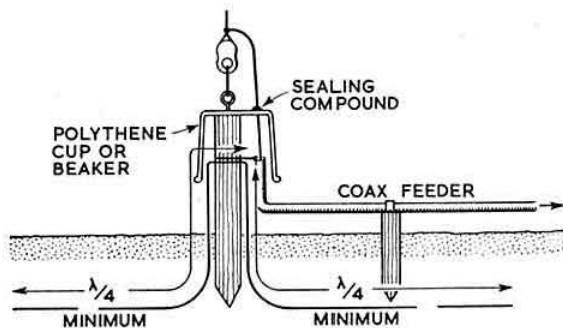
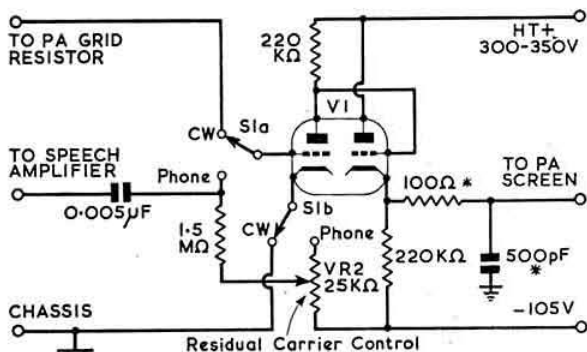


Fig. 6. Method of anchoring vertical radiators.

The most successful application of the solid ground-plane that has been tried out in practice, employed the steel flight-deck of an aircraft carrier: a 14 Mc/s whip was mounted on the port side some way aft of amidships and fed as in Fig. 4. Low angle radiation was obtained in all directions, even to seaward of the whip. A similar arrangement on a galvanized-iron house roof has also given good results.

"Series Gate Modulation"

THE author (Mr. P. J. H. Matthews, G3BPM) regrets that in Figs. 4, 5 and 6 of the article "Series Gate Modulation" in the May 1959 issue of the R.S.G.B. BULLETIN, the connections to the phone/c.w. switches (S1a, b) were incorrectly shown, rendering the clamp feature ineffective on c.w. The correct circuit is shown in the diagram below.



Practical series gate modulator. For p.a. inputs up to 75 watts, suitable valves are the 6SN7 and 12AU7. For higher inputs, a 12BH7 may be used. Alternatively, two 6J5s or triode connected 6V6s are suggested. The 100 ohm resistor and 500 pF capacitor marked with asterisks are the normal screen decoupling components mounted close to the p.a. valveholder.

D.C.B.R.U. Award

AN English translation of the rules governing the award of Le Diplôme du Congo Belge et du Ruanda-Urundi (D.C.B.R.U.) can be obtained on application to Union Congolaise des Amateurs de Radio, Post Box 3748, Elizabethville, Belgian Congo.

Ten Metre Mobile Transmitter

By D. C. MORRIS (GW2FVZ)*

NO originality is claimed for any of the circuits used in the construction of the transmitter described in this article but results have proved that it functions extremely efficiently and many DX contacts have been made. Whilst size was a consideration, this was not deemed to be as important as low cost, while a crystal oscillator was chosen in preference to a v.f.o. on the grounds of stability.

A crystal oscillator multiplier circuit was found in the A.R.R.L. *Mobile Manual* and this seemed to be ideally suited for the job. This uses a 6J6, the first half of the valve functioning as a crystal oscillator/doubler. Using a 7 Mc/s crystal useful output is obtained from the anode circuit at 14 Mc/s, and is fed to the second half of the 6J6 which acts as a doubler from 14 to 28 Mc/s. It is essential for the formers for both coils and the valve holder to be of ceramic or preferably p.t.f.e.—the author found that the drive fell by upwards of 50 per cent when other materials were used. The driver provides up to 8 mA of grid drive to a loaded 807 whilst by staggering the tuning of the anode coils it is possible to obtain 3 to 4 mA throughout the 10m band simply by changing the crystals.

The circuit of the complete transmitter is shown in Fig. 1. The p.a. is conventional with a switched meter to read the grid and anode currents of the single 807 valve. Parallel feed to the tank circuit is used in order that the variable condenser may be mounted on the front panel without insulation. The tank coil is wound from 10 s.w.g. bare copper wire and is soldered directly across the condenser. A 3 turn swinging link is fitted on to the spindle of a miniature

variable condenser from which the vanes have been removed and connected to the aerial socket via the aerial change over relay.

In the author's case, a certain amount of fixed bias for the p.a. is available from the battery (the car has a positive earth system) and advantage has been taken of this by returning the "earthy" end of the grid resistor to the live heater line. In this way it is possible to make the grid resistor lower than normal.

Modulator

The modulator section of the transmitter is not quite conventional but produces reasonably good quality audio judging by reports from local and DX stations. The speech amplifier is a 12AT7, the carbon microphone being fed directly into the cathode of the first section, thus obviating the need for a microphone transformer. The second half of the 12AT7 is fed via the gain control and the output is resistance-capacity coupled to the grid of a single 807 modulator valve. Bias for the modulator is obtained from the 200 ohm winding of the aerial relay coil which is connected in series with the negative lead of the 500 volt supply to the transmitter. As soon as anode current is drawn the relay automatically switches from "RECEIVE" to "SEND."

The modulation transformer presented some difficulty at first and several were tried. It was eventually found that the best cheap method was to use almost any winding that is centre-tapped, connect h.t. positive to the tap, p.a. anode to one end of the winding, and the modulator anode to the other. The winding used should of course be capable of carrying the h.t. current drawn by the respective valves. The one used by the writer is the secondary of a 250-0-250 volt potted mains transformer, the primary of which went "open circuit" about five years ago. Side tone is taken off one of the heater windings. For an input of 20-25 watts, the ratio should be of the order of 1 : $\sqrt{2}$ but the method used has proved quite satisfactory in practice.

* "Cilfash," South Street, Caerwys, Mold, Flint.

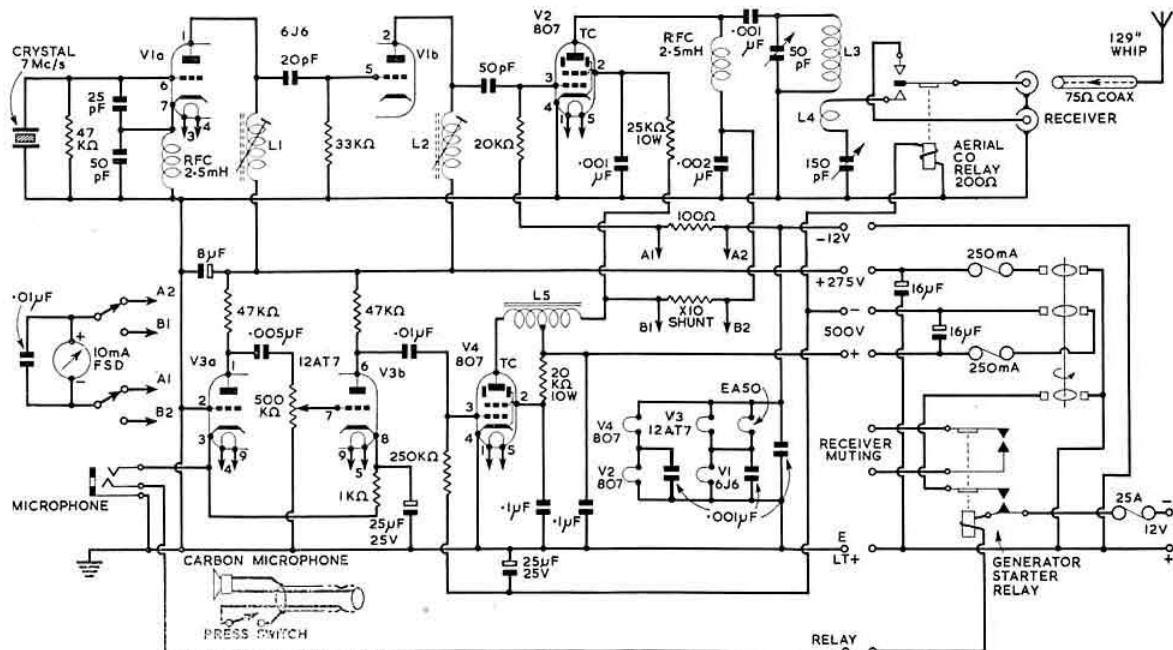


Fig. 1. Circuit diagram of the GW2FVZ mobile transmitter for 10m.

L1, 28 turns 26 s.w.g. enamelled copper, closewound on $\frac{1}{2}$ in. ceramic former; L2, 14 turns 22 s.w.g. enamelled copper, closewound on $\frac{1}{2}$ in. ceramic former; L3, 6 turns 10 s.w.g. 1 in. diameter $1\frac{1}{2}$ in. long; L4, 3 turn link (see text); L5, modulation transformer (see text).

Power Supplies

The heaters of the valves take their supply direct from the car battery, the two 807s being connected in series across 12 volts, as are the 6J6 and the 12AT7. As the 6J6 draws 0.45 amps and the 12AT7 only 0.3 amps, the heater of an EA50 diode is connected in parallel with the 12AT7.

H.t. is supplied by a W/S 19 Mk. 1* Power Unit which has two h.t. output windings, one of 275 volts which is used for the speech amplifier and exciter, and another of 500 volts which is fed to the centre tap of the modulation transformer to supply the p.a. and modulator. The rotary generator has been removed from its original case and mounted under the bonnet of the car on a piece of wood which has been fitted with rubber feet to eliminate noise. A heavy duty relay, fitted near to the rotary, controls the whole unit via the "press-to-talk" switch on the microphone. A pair of auxiliary contacts on the relay break the h.t. supply to the receiver on "transmit." The receiver is supplied from a separate vibrator pack.

With the p.a. loaded to about 55-60 mA at 400 volts (the output of the 19 set power unit drops considerably on load) a well modulated carrier can be put on the air for the modest expenditure of about 10 amps of input current and even after long sessions of operating the writer has never been left with a flat battery.

Aerial

The aerial is very simple and consists of a 129 in. whip, fed at the bottom with 72 co-axial line. A conventional quarter-wave (8 ft.) vertical has been tried but field strength tests have proved the 129 in. whip to be greatly superior.

Results

Results obtained with the transmitter have been very gratifying, contacts with W and VE stations being quite commonplace. Four continents have been worked, KA2AL in Tokio being the best DX. A mobile-to-mobile contact with K2OLG/M was another highlight. A total of 19 countries has been worked on 28 Mc/s and the writer is hoping for a contact with Oceania in order to be able to claim a mobile W.A.C.

Thanks are due to GW3JGA and GW3CF/M for their assistance in carrying out the numerous tests necessary in the building of this transmitter.



"Dud" Charman, G6CJ, giving his famous aerial demonstration to the Barnet and District Radio Club, watched by an audience of 70. (Photograph by G3LXP).

TUNBRIDGE WELLS MOBILE RALLY

Dunorlan Park, Pembury Road, Tunbridge Wells

Sunday, August 23, 1959

Dunorlan Park is a noted beauty spot with a boating lake, refreshments and plenty of shade.

RALLY STATIONS

G2UJ/A on 3.5 Mc/s G4IB/M on 144 Mc/s

Organized by the West Kent Amateur Radio Society.

SOUTH MANCHESTER & STOCKPORT RADIO RALLY

Sunday, August 30, 1959

This event will be rather different from most mobile rallies. The first assembly point will be Davenport Cinema Car Park, Stockport, for those wishing to take part in or to follow the treasure hunts (one for those equipped with mobile gear, one for those without radio). Both sections will commence at 2 p.m. but competitors must assemble by 1 p.m.

The final assembly point will be the Bull-in-Thorn Hotel, six miles from Buxton on the Ashbourne Road. Tea will be at 4.30 p.m.

Top Band and 2m stations will be in operation at both assembly points.

Further details from C. M. Denny, G6DN, 18 Willoughby Avenue, Didsbury, Manchester 20.

Organized by the South Manchester Radio Club and Stockport Radio Society.

LONDON MOBILE RALLY

Festival Gardens, Battersea

Sunday, September 6, 1959

Organized by the London Short Wave Club.

WOBURN ABBEY NATIONAL MOBILE RALLY

Woburn Abbey, Bletchley, Buckinghamshire

(by permission of His Grace the Duke of Bedford).

Sunday, September 13, 1959

- * Competitions for mobileers, XYLS and Junior ops.
- * Tours of Woburn Abbey State Apartments.
- * Zoo Park (3,000 acres, more than 2,000 animals).
- * Children's Playground, Pets Corner and Boating Lake.
- * Restaurant, Picnic Grounds and Snack Bar.
- * Special Rally Car Parks.

RALLY STATIONS

G3NMS/P—1.8 Mc/s G2CAJ/P—3.5 Mc/s

G3FZL/P—144 Mc/s

Organized for the R.S.G.B. by the Amateur Radio Mobile Society.

LINCOLN MOBILE RALLY AND HAMFEST

Technical College, Cathedral Street, Lincoln

Sunday, September 20, 1959

Attractions include lectures and demonstrations, a talk on beauty culture for the YLs and XYLS, a junk sale and high tea. Talk-in stations on 80 and 160m. Tickets, price 8/- each, may be obtained by sending a remittance and s.a.e. to R. W. Sadler, 14 Hainton Road, Lincoln.

Organized by Lincoln Short Wave Club.

Grounded-grid Exciter – Better D.S.B. – The Auto-Fist – Ribbon Aerials – Electrical Noise Blanking

TO most amateurs of pre-war vintage, the r.f. power amplifier is a simple matter: you feed a high impedance signal to the grid of a valve and—all being well—take out a somewhat larger signal from the anode circuit. But nature abhors anything so simple as this and so for quite a few years now those wily engineers and v.h.f. types have blurred the issue by sometimes taking the output from the cathode (the cathode-follower or “plate return” amplifier which has an application as a v.h.f. power amplifier if you do not mind using a peak drive input voltage equal to the anode voltage) and, more often, have insisted on our connecting the grid straight down to chassis and feeding the signal into the cathode (the grounded grid or “inverted” amplifier). It is becoming ever more clear that the “new look” is often the right one and that those of us who try and plod along with the classic configuration are missing a lot of good circuit devices.

By now grounded-grid amplifiers need no recommendation to s.s.b. or v.h.f. operators, but their usefulness extends far beyond these fields. Admittedly, the grounded-grid power amplifier cannot easily be used for A3 since some of the drive power appears in the output circuit, making it impossible to modulate 100 per cent. But an application that is equally valuable to A1, A3 and A3a operators is their use in exciters, as amplifiers or frequency doublers. This was made clear in a CQ article by W6AJF published November 1957. Among much other useful information he provided was the input impedance and transconductance of popular valve types used in g.-g. linears (including 6AG7 90 ohms, 11,000 gm.; 6V6 266 ohms, 3750 gm.; 6L6 192 ohms,

while in the first stage and the 21 Mc/s tripler a positive voltage is connected to the screen.

The Auto-Fist

With tape recorders available in many shacks, it is worth reprinting from CQ, W5DF's simple method (Fig. 2) of using one either as a pre-recorded CQ auto-sender or for playing back the other fellow's fist (this could be a new form

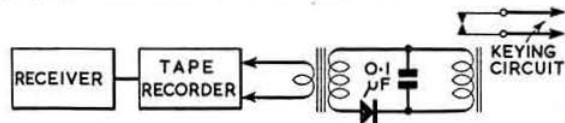


Fig. 2. Using a tape recorder as an auto-keyer.

of the “try other foot” signal). The transformer is a standard a.f. output type used with the low-impedance windings connected to the recorder's Ext. L.S. sockets; while the relay should preferably be of the high-speed type, it need not be unduly sensitive. Almost any type of selenium or other form of metal rectifier could be used. One trick made easy by the speed change facilities provided on many tape decks is to play back at either double- or half-speed.

Better Double-sideband

The d.s.b. system (see *Technical Topics*, September 1958) still seems to arouse a certain amount of hostility in s.s.b. circles. Fortunately, we are not called upon to comment on the rights and wrongs of the situation but merely to report impartially that an article “Better d.s.b.” by K9BDO (CQ,

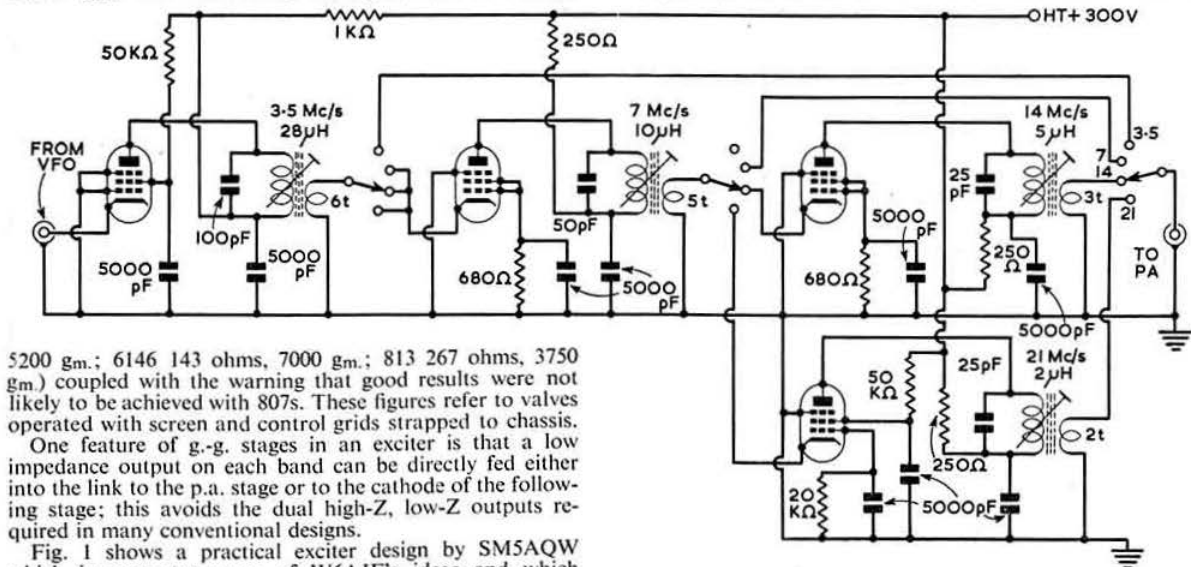


Fig. 1. SM5AQW's grounded-grid exciter uses four 6AG7s and provides into a 75-ohm link an output of 1 watt on 3.5 Mc/s, 1 watt on 7 Mc/s, 2 watts on 14 Mc/s, and 2½ watts on 21 Mc/s.

5200 gm.; 6146 143 ohms, 7000 gm.; 813 267 ohms, 3750 gm.) coupled with the warning that good results were not likely to be achieved with 807s. These figures refer to valves operated with screen and control grids strapped to chassis.

One feature of g.-g. stages in an exciter is that a low impedance output on each band can be directly fed either into the link to the p.a. stage or to the cathode of the following stage; this avoids the dual high-Z, low-Z outputs required in many conventional designs.

Fig. 1 shows a practical exciter design by SM5AQW which incorporates many of W6AJF's ideas and which was described in the April 1959 issue of QTC, journal of the Swedish society. It uses four 6AG7s and provides output on 3.5, 7, 14 and 21 Mc/s. The 7 and 14 Mc/s doublers operate with the screen and control grids strapped together,

March 1959) points out that the distortion which is noticeable on some d.s.b. signals is due, mainly, to the use of screen grid modulation in high-level balanced modulator output stages. Drive, bias, feedback and loading are all fairly critical in such systems and pose problems to those without full setting-up equipment. K9BDO's solution is to adapt many s.s.b. ideas to d.s.b. but without, of course, incurring the problem of filtering or phasing out one sideband. Fig. 1 shows the key stage of his 6AG7-12BH7A-1625 transmitter. In the 12BH7A balanced modulator, the grids are driven into Class C and all anode power is supplied by the a.f. drive. From a d.c. viewpoint the anodes are at chassis potential (we put that in to stop anyone writing to the Editor to point out an "obvious error" in the circuit diagram). When there is no a.f., no anode current flows, and, when balanced, no r.f. leaks through. Since anode current flows only with a.f. applied to the cathode, small receiving valves such as the 12BH7A can supply considerable output without strain. Even with a swamping resistor of about 5000 ohms, the circuit shown is said to drive an 1625 or 807 in Class B linear to 40 watts output. A.m.

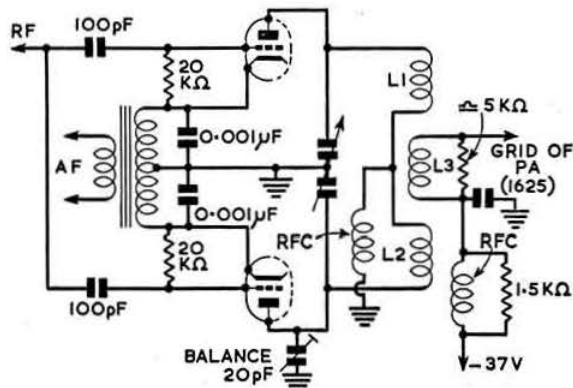


Fig. 3. K9BDO's balanced modulator for a d.s.b. rig. The coils are wound on 1½ in. diameter formers: 3.5 Mc/s—L1 and L2 16 turns, L3 14 turns; 7 Mc/s—L1 and L2 14 turns, L3 10 turns; 14 Mc/s—L1, L2 and L3 4 turns each. On 3.5 Mc/s 25 pF fixed paddles are wired across L1 + L2 and across L3.

exponents using this circuit for the first time will need to read up on the operation of linear p.a. stages; remember they require a well-regulated power supply with good filtering.

If you want to try real QRP d.s.b. you could omit the linear (but just because there would be 0 volts d.c. on the final, do not try and claim that your power is 0 watts!) Alternatively you could read W6TNS's article on a fully transistorized 100 mW d.s.b. rig in *Radio and TV News* (April 1959) for 14, 21 and 28 Mc/s.

Aerials from Ribbon Feeder

Some months ago we described two aerials using 300 ohm feeders: the twin-feed Windom and the T2FD. This month we propose to include two aerials in which 300 ohm feeder is used for the dipole elements: see Fig. 4. The ribbon feeder folded dipole (Fig. 4(a)) has been with us for a long time now but the form shown (it appears in several editions of *The Radio Handbook*) takes into account the velocity factor of the ribbon feeder and gives a better match than the more usual system of just joining up the ends of a length of the feeder; the length ($462/f$ ft.) is also slightly modified from the standard dipole formula. Where a space-saving is required the end pieces can be dropped down symmetrically with very little lowering of efficiency. This system has given satisfactory service at G3VA and can be recommended to anyone looking for a simple non-critical single-band

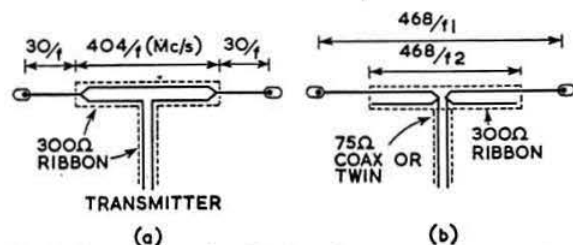


Fig. 4. Two aerials using 300 ohm ribbon: (a) the conventional ribbon folded dipole with modifications suggested by "The Radio Handbook"; (b) Paralleled dipoles made easy with 300 ohm ribbon, by making f_1 7 Mc/s and f_2 14 Mc/s. The aerial can be used on 7, 14 and 21 Mc/s.

aerial. The multi-band aerial of Fig. 4(b) has appeared in a number of publications, including *QST*, but may be new to some. In this aerial, the ribbon feeder is simply used as a very easy means of producing two paralleled dipoles, so that the actual feeder is a standard 70 ohm type. By erecting a 66 ft. span, and using 33 ft. of ribbon feeder plus two 16 ft. lengths of wire, the resulting aerial functions on 7 and 14 Mc/s as half-wave dipoles; on 21 Mc/s the 7 Mc/s section operates as a $\frac{3}{4}\lambda$ aerial; the dimensions could of course be scaled for any other combination of bands. But watch out for 42 Mc/s harmonic from your 21 Mc/s output since this will be radiated very nicely from the 33 ft. dipole section.

Electrical Interference Blanking

Some editions ago, *The Radio Handbook* used to describe what was known as the "Jones Noise-balancing Circuit" (Fig. 5) for reducing the effect of severe local power-line leak and some forms of electrical interference. The basic idea was to use a second short aerial located so as to pick up the maximum amount of noise and the minimum amount of signal and then to feed this to the receiver 180° out of phase with the input from the main aerial. By careful adjustment it was claimed that one could reduce interference by about 3-5 "S" points while reducing the wanted signal by only about 1 "S" point. It is some time since we have heard of anyone using this system on the amateur bands but a somewhat similar technique turned up a few years ago in the Spencer-West anti-patterning device intended to reduce break-through when fitting "universal" type Band III converters to Band I television sets.

Now one sees an echo of this system—though much refined and without the setting-up difficulties—in the latest *Collins* 136-series of "noise blankers," intended for fitting to such receivers as the 75A4, 75S1 and the popular KWM-1 transceiver. This device is designed to eliminate impulse signals having a repetition rate of up to 10 kc/s (this includes ignition, electric motor, and appliance noises together with some types of corona and atmospheric discharges), early in the receiver, making it effective for s.s.b. reception. It consists basically of a t.r.f. receiver tuned to 40 Mc/s where electrical interference is usually most severe. A received noise signal is amplified, detected, pulse shaped and then used to trigger a gating circuit in the i.f. circuits of the receiver. An incoming noise pulse shuts off the receiver for the duration of the noise, which is usually from 10 to 40 microseconds.

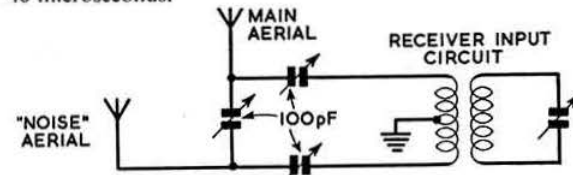


Fig. 5. The Jones noise-balancing circuit needs very careful setting-up but it can appreciably reduce the effects of interference.

Amateur Activities at C.C.I.R. IXth Plenary Assembly

By Dr. R. L. Smith-Rose, C.B.E.

(President R.S.G.B.)

THE IXth Plenary Assembly of C.C.I.R. was held in the Biltmore Hotel, Los Angeles, during the period April 1-29, 1959. During this meeting the Los Angeles Area Council of Amateur Radio Clubs established an Amateur Radio station on the eleventh floor of the hotel. The call letters K6USA had been assigned to the station, which was under the direction of Ray Meyers (W6MLZ), Director of the South-West Division of A.R.R.L. The station comprised an impressive array of commercially made transmitters and receivers for use on the amateur bands, including some of the latest type single sideband equipment. K6USA was continuously manned and operated by local amateurs, and messages were exchanged with other amateurs on a world-wide basis. QSOs were acknowledged by an interesting and novel QSL card, showing a map of the world with the stripes and 49 stars now appropriate to the United States. The card included the following message from the President:

"Greetings: On behalf of the 185,000 Amateur Radio operators in the United States and its territories, please accept my personal thanks for contacting our Special Events Radio Station K6USA.

*Dwight D. Eisenhower,
President of the United States of America."*

Official delegates to the C.C.I.R. who were licensed radio amateurs were invited to operate this special station, and arrangements had been made with a number of other nations to handle third party radio communications. Several delegates took advantage of these facilities.

On April 27 a number of C.C.I.R. delegates interested in Amateur Radio were invited to dine with the Fifty Club of California, Inc., one of the most prominent Amateur Radio clubs in the U.S.A. There were present also as guests, the presiding officers of a number of other Amateur Radio clubs affiliated with A.R.R.L. The C.C.I.R. visiting guests included:—

T. R. Clarkson, G.P.O., Wellington, New Zealand; F. Dickson, U.S. Army Signal Propagation Agency, Fort Monmouth, N.J., U.S.A.; H. E. Dinger, Naval Research Laboratory, Washington, D.C., U.S.A.; J. H. Gayer, International Frequency Registration Board, Geneva; M. Joachim, Ministry of Communications, Prague, Czechoslovakia; K. R. Koehler, Ministry of Posts and Communications, Bonn, F.G.R.; J. J. Malone, Department of Posts and Telegraphs, Dublin, Eire; A. Schaedlich, Fernmeld Techn. Zentralamt, Darmstadt, F.G.R.; R. L. Smith-Rose, D.S.I.R., Radio Research Station, Slough, England; G. S. Turner and I. L. Weston, Federal Communications Commission, Washington, D.C., U.S.A.

At this dinner the following telegram was received from the General Manager of A.R.R.L. and read to the assembled company:

"On behalf of the officers, directors, staff and members of the American Radio Relay League may I extend a most cordial welcome to the amateurs attending the C.C.I.R. conference. It speaks well of our fraternity that so many of you have been chosen by your Governments to represent them at this important gathering. It is clear that the deep scientific curiosity, the desire to know, the yearning to reach out in friendship to one's fellows the world over which are so characteristic of the amateur have helped to make you all so proficient in your profession. I regret that

I cannot greet you personally this evening, but I am looking forward to seeing many of you at Geneva in a few months.

My warmest 73s

A. L. BUDLONG, WIBUD,
General Manager."

Responses to these greetings were made by all of the above-mentioned guests, who were, in the course of the evening, elected honorary members of the Fifty Club of California, Inc.

The proceedings terminated with a most interesting and lively talk by Ray E. Meyers on the exploration of the Arctic by submarine. The talk was illustrated by cinema pictures taken by Mr. Meyers when he was a member of the crew of the first U.S. Navy submarine to explore the Arctic waters. He also showed a brief film relating to the recent passage of the new *Nautilus* under the North Pole.

The whole evening comprised a very happy international gathering of many and varied interests in Amateur Radio.

Improving Your Morse Speed

IT may not be generally known that in addition to the R.S.G.B. Slow Morse Practice Transmissions, there is another useful series of slow Morse exercises outside the amateur bands. They are intended for Royal Naval Sea Cadet Corps.

- (i) The Admiralty broadcasts special slow Morse exercises for the Sea Cadet Corps on Thursdays on 4455 kc/s from GQR51 as follows: 19.00-19.15 —4 w.p.m.; 19.15-19.30 —8 w.p.m.; 19.30-19.45 —12 w.p.m.
- (ii) There is also an A.C.R. broadcast on 157.9 and 4455 kc/s under the call-sign MFO20 on Mondays and Wednesdays from 19.30 to 21.00. This broadcast is for inter-communication between R.N.R. Wireless Districts. The first 45 minutes is conducted at 15 w.p.m. and the last 45 minutes at 22 w.p.m.

R.S.G.B. Contest Forms

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

SOUTHERN REGIONAL MEETING

Royal Hotel, Cumberland Place, Southampton
Sunday, September 20, 1959

Programme:

Assemble	2 p.m.
Photograph	2.15 p.m.
Business Meeting	2.30 p.m.
High Tea	4.30 p.m.
Films and Raffle	5.30 p.m.
Informal Discussion	7 p.m.

Tickets, price 10/- each, are available from G. Allcock (G3ION), 29 Granby Grove, Southampton, or D. Metcalf (G3GHQ), 80 Kings Road, Southsea. Last day for reservations, September 12, 1959. Individual lunches can be booked at the hotel on request. The Council will be represented by Messrs. N. Caws, G3BYG (Honorary Treasurer), L. E. Newnham, G6NZ (Immediate Past President) and C. H. L. Edwards, G8TL (Member of Council). A coach tour (duration four hours) through the New Forest visiting Beaulieu Abbey and Motor Museum is being arranged for non-radio friends. Tickets, price 10/- each (children half-price), are available from G3ION or G3GHQ but do not include tea at the Abbey.

The MONTH ON THE AIR

A CHRONICLE OF EVENTS ON THE HF AMATEUR BANDS

By J. DOUGLAS KAY (G3AAE)*

WITH no M.O.T.A. for over two months, and this particular issue of necessity reduced in size, this is an extreme case of trying to get a quart into the proverbial pint pot. Something has to go, and as nearly all the band activity reports are almost two months old and consequently of little practical value, it has been decided to omit them this month, and to devote the available space to DX news, new QTHs, etc. As some slight compensation for omitting the activity reports a few of the highlights of DX reported on any band or mode have been extracted and given special prominence in a box. There is no reason why this should not continue as a regular feature of M.O.T.A. if readers so desire.

The Amateur Spirit

From Leslie Hill, G8KS, comes an account of a really praiseworthy achievement on the part of Colin Johnson, VP8CC. Between 1957 and 1958 Colin was stationed on Deception Island, South Shetlands, and from 1958 to 1959 on the Loubet Coast of Grahamsland. Both these locations count as separate DXCC countries.

Owing to an extremely cold winter preventing the sea ice from melting and not allowing the relief ship to berth near the base on the Loubet Coast the personnel being relieved had to abandon the station, and journey over 30 miles by dog pulled sledges. Due to the necessity of travelling with the least possible load Colin had to leave behind a great number of personal belongings, and this he did in order to bring out with him the 1,400 completed QSL cards covering his two years operating in the Antarctic. Immediately he reached the Falkland Islands he mailed all the cards to the R.S.G.B. Bureau whence they have now been distributed.

In these days when many DX stations do not QSL because they just cannot be bothered, it is reassuring to know that there are still some amateurs left who hold dear the Spirit of Amateur Radio. Well done Colin, we rejoice to know that you got back home safely.

Operating Techniques

Jack Mann G3AAM remarks on a practice that is becoming all too common these days, particularly on 21 Mc/s.

* 40 Fryston Avenue, Coulsdon, Surrey.

Many British stations will QSY into the American 'phone band and zero beat the frequency of the stations they call or work. In remote country districts, where no large amateur population is within ground wave distance this may not cause any trouble, but in large towns and cities and built-up areas generally, this selfish practice can cause havoc to local amateurs trying to copy W/K signals in the American 'phone band. This is often a sign of a newly licensed or inexperienced operator, and where it does occur can usually be stopped by contacting the offending station and explaining the trouble being caused by his lack of consideration.

At present there seem to be two grades of tone report used on the amateur bands: T9 is what is generally heard and T8 indicates anything that is not T9! This is just stupid. There are many stations to be heard on all the h.f. bands which are quite definitely T5 and below: including several that are positively T1. Please pay more attention to the giving of accurate reports: it is only fair to the station with the defective note as, unless he is told about it, he may be blissfully unaware that he is radiating a signal which is sub-standard. The fact that a QSL card is desperately required should never have any bearing on the outgoing report. A truthful and accurate report never resulted in a lost confirmation for anyone.

Finally on the question of c.w. operating, let us never forget that our fists are far from perfect, and that we should never cease to try to raise the standard of our operating on the bands. Just as a voice gives a good insight into the character of its owner on telephony, the fist of a c.w. operator is the hallmark of his character.

DXpeditions

Ifni. EA9DE appeared from Ifni during June and operated exclusively on s.s.b. on 14 and 21 Mc/s for about a week. He refused to answer any calls on c.w. but did work a number of stations using a.m. The rig was a Collins KWM-1. The operator, EA2CA, intends to return south to put both Rio de Oro and the Canary Islands on the s.s.b. map in the autumn.

While EA9DE was a private venture the Spanish Society (U.R.E.) has sponsored two official DXpeditions to Ifni, the first of which, EA9IA, has already appeared on the bands. EA9IA was operated by EA3GF and EA3IS, while EA9IB, who is scheduled to appear in August, will be operated by

EA4GA and EA4FU. U.R.E. give the following frequency details for both stations: c.w.—7,020, 14,070 and 21,100 kc/s; a.m.—7,050, 14,120 and 21,200 kc/s. Stations should call either 10 kc/s higher or lower than the EA9's frequency. All QSL cards should be sent via U.R.E., and if a direct reply is desired one I.R.C. should be enclosed.

(Flash—despite rumours that EA9DE will not count for Ifni W1WPO of A.R.R.L. DXCC Department states that credit will be given unless advised otherwise. Thanks to WGDXC.)

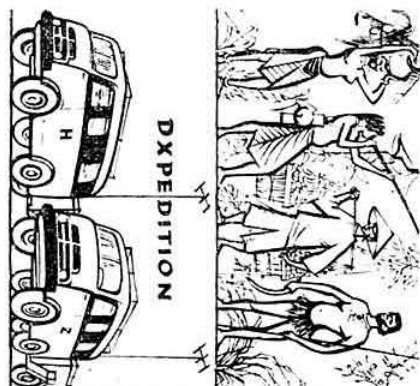
St. Pierre. VO1BD will be on from St. Pierre during the first week of August signing FP8AY. Using a DX40 and a Sky Buddy he will be on all bands phone and c.w.

Tokelau. It was reported in the April M.O.T.A. that VR2DG was expecting to visit ZM7 in the near future. VR2AS, the Fiji QSL Manager, writes to say that VR2DG did not manage to get to Tokelau, but is now back in Australia where he hopes soon to have a VK5 call-sign. However, from WGDXC comes news that there will be a DXpedition to Tokelau in the near future, that it will be of 30 days duration, and that the prefix will not be ZM7 but will be ZK3. No other details are yet available. Monaco. From G3LKK comes news that he, together with G3ATU and G3HCL, will be treading the well worn path to Monaco in August. They will be active between August 23 and 30 operating on 14, 21 and 28 Mc/s c.w. and either a.m. or s.s.b. Their call-sign will be 3A2AE.

Portuguese Timor. A group of VK5 amateurs is shortly visiting CR10 and is due to commence operations on August 13. Cocos Islands, etc. In a most welcome letter VE3MR outlines his recent s.s.b. DXpeditions. Accompanied by T12HP, he operated from the Cocos Islands and signing T19SB made 1,100 s.s.b. contacts with a further 1,200 on c.w. under the call-sign

DXotic Column

7G1A	kc/s	21,045	c.w.	G.M.T.	19.00	Republic of
XE4B	14,105	c.w.	05.15			Guinea
YS5AD	21,050	c.w.	17.15			Socorro Is.
ZL3VB	14,060	c.w.	08.25			Brunei
CK6ZZ	14,050	c.w.	10.15			Chatham Is.
ZK2AB	21,200	a.m.	10.20			Caroline Is.
KB6BH	21,320	a.m.	09.50			Niue Is.
EA9IA	14,080	c.w.	17.30			Canton Is.
FB8CD	21,120	a.m.	17.30			Ifni
VR1B	21,030	c.w.	19.30			Comoro Is.
FW8AA	14,325	c.w.	07.00			Gilbert Is.
CK6JA	21,300	c.w.	10.00			Wallis Is.
KA0IJ	21,120	a.m.	16.00			W. Caroline Is.
CE0AC	14,030	c.w.	22.45			Bonin Is.
JT1AB	14,062	c.w.	14.30			Easter Is.
HK0AI	21,235	a.m.	00.30			Mongolia
VS4JT/VSS	14,300	s.s.b.	15.00			San Andreas Is.
						Brunei



CZECHOSLOVAKIA

OK7 HZ

JIRI HANZELKA

The QSL card being used by the Czechoslovak round-the-world expedition which has already been active in Albania and Bulgaria and is scheduled to operate from many countries during the next five years.

T19CW. Then, on his own, VE3MR operated PZ1MR from Dutch Surinam making 1,200 contacts, from French Guiana FY7YF 600 contacts, from British Guiana VP3RO 700 contacts and from the Dutch Antilles PJ5AC 700 contacts, all on s.s.b. As previously advised all T19 cards should be sent to T12HP, while cards for the other calls should be sent to VE3MR. All VE3MR requires is a self-addressed envelope, but he suggests that I.R.C.s be included with T19 applications to T12HP. Martin says that FY7YF is normally active on c.w. and that all cards for contacts working him on this mode should be routed to W2FXA.

Rathlin Island. Marconi carried out many of his early wireless experiments between Rathlin Island (six miles off the north Antrim coast) and the mainland of Northern Ireland. To commemorate the fiftieth anniversary of the award of the Nobel prize to Marconi, a group of Northern Ireland amateurs are going to set up a station on Rathlin Island. GIs 2DZG, 3JFX, 3HXV, 3KYP and 5UR expect to start operations at approximately 15.00 G.M.T. on September 11, and continue until 12.00 G.M.T. on the 14th. Using the call-sign GB3RI (useful for WPX) they will operate on 1.8 to 28 Mc/s and 144 Mc/s, phone and c.w. except on Top Band where c.w. only will be used. QSL to the address in QTH Corner or via the R.S.G.B. Bureau marking the cards "via G13HXV."

News From Overseas

Pacific. KL7PIV and XYL KL7BHE have been resident in California since the beginning of the year but will shortly move to Hawaii where KL7PIV will take up a position which will entail extensive travelling throughout the Pacific area. Such prefixes as KM6, KW6, KX6, KB6, KS6 and KP6 are mentioned as likely ports of

call. Ed owns a KWM-1, which will certainly see some use if he puts it on the air from any of those mouth-watering call areas.

India. Norman Wilkinson, well-known as MP4BBF, is now in India where he will remain until March 1960. He is licensed as VU2CI with permission to operate on 14 Mc/s c.w. only with a maximum power of 25 watts. He hopes eventually to obtain permission to use 100 watts on both c.w. and a.m.

Sumatra. Another well-known Bahrain amateur has also left the Island on temporary assignment. John St. Leger MP4BBE is now in Sumatra where he will remain for eight months. Unfortunately the political position makes the granting of an amateur licence seem extremely unlikely, but John promises to sound out the authorities there. He asks that all QSL cards for MP4BBE should be sent via the R.S.G.B. Bureau only; if they are sent to Bahrain they will be subject to very heavy delay or might even get lost.

Cyprus. From ex-G3KVV, who is the Hon. Secretary of the R.A.F. Radio Club in Nicosia, comes news that ZC4AM is not to close down after all. He also reports that ZC4GS, ZC4VI and ZC4PR have closed down, but ZC4RK, ZC4SR, ZC4MM and ZC4BC have recently been licensed.

Japanese Antarctica. It was reported in the June M.O.T.A. that G3YF had logged a station signing 8J1AA. From G6ZO comes information that this is a quite genuine call belonging to the Japanese Antarctic base.

Republic of Guinea. 7G1A has appeared recently on 21 Mc/s c.w. from the Republic of Guinea, and is apparently operated by a Czechoslovakian operator. It will be remembered that shortly after Guinea's break with France, resulting in separate DXCC country status, FF8AC/GN was very active until his return to France. Thus it seems that 7G1 is the new prefix for the Republic of Guinea.

Aaland Island. OH0NC writes to say that because of the tremendous number of listener reports he receives, he regrets that he will henceforth be unable to acknowledge them. There are, however, quite a few DXpeditions to OH0 from the Finnish mainland, and they generally oblige with a confirmation.

Seychelles. A certain VQ9XN, who says his QTH is Victoria, is active and advises stations working him to QSL via G3AUR. This station is almost certainly bogus as G3AUR has never heard of him.

West Africa. Writing from Northern Nigeria, Michael Dransfield G3JKO (ex-ST2KO) says that he will not be applying for a ZD2 licence as his tour of duty there is so short. However, he is doing a lot of listening and during the first 12 days alone heard 186 different G stations on the DX bands. He says that XE4B went QRT at 12.00 G.M.T. on July 7, and it seems more than likely that the XE4 did not work a single G station. It is known for certain that neither G3AAM, GW3AHN, G3YF, G2PL, nor G6ZO worked him, which does seem to indicate that he was not worked from the U.K. Does anyone confess to working him?

While on the subject of West Africa, the writer has often wondered why some of the 9G1 or ZD2 brethren have not gone on DXpedition to French Togoland: perhaps there is some difficulty in obtaining a licence

from the French authorities. One thing that is certain is that FD4 is a prefix on nearly every DX enthusiast's "wanted" list, and a DXpedition operating from there would be extremely popular. As the crow flies the distance of Lome from both Accra and Lagos is less than 150 miles.

Kenya. In a long letter Bill Fry VQ4FK reports that, despite frequent changes of address, he has managed to work 222 countries. Bill says that Robbie, VQ4ERR, is all primed for his August DXpedition to Seychelles (VQ9), which is scheduled to start up on August 21. He also says that VQ1RET should be active for a few days from Zanzibar in the near future, while from other sources comes the news that VQ4AQ has a long vacation coming up next year and may use part of it activating VQ1, VQ7 and VQ9.

DX News in a Nutshell. From the West Gulf DX Club come the following items: ZC3AC (Christmas Island) is now signing VK9MV and is active on 14,110 and 14,082 kc/s at weekends.

IL1AIM, recently very active from Lampedusa in the Pelagic Islands and some 230 miles from the Italian mainland, will not be given DXCC country status according to information received by WIWDD.

(Continued on page 21)

QTH Corner

BVIUS. USTDC, MAHG, A.P.O. 63, San Francisco, California, U.S.A.

EA9DE. via EA2CA or W2KUW.

EA9IA. P.O. Box 220, Madrid, Spain.

EA9IB. P.O. Box 220, Madrid, Spain.

EL2Z. P.O. Box 378, Monrovia, Liberia.

FP8AB. via K2JGG.

FP8BC. via W1YIS.

FR7ZD. via ZETJZ.

HH2CC. Box 235, Port Au Prince, Haiti.

HS1E. A.P.O. 146, San Francisco, Cal., U.S.A.

IL1AIM. via IL1AIM.

JT1AB. Box 369, Ulan Bator, Mongolian S.S.R.

KG4AD. Box 32, M.B. N.B., Navy 115, c/o F.P.O., N.Y.C., U.S.A.

MP4QAO. c/o Qatar Petroleum Co., Umm-said, Qatar, Persian Gulf.

OA3D. Box 168, Chimbote, Peru.

OQ5IK. P.O. Box 910, Stanleyville, Belgian Congo.

PX1PF. via DL9PF.

SV0WP. USA5G, A.P.O. 223, New York, N.Y., U.S.A.

W5YQO/VE8. Bob Simon, 920th Sqdn, Frobisher Bay, N.W.T. Canada via Montreal.

VP2GAK. Ken Kern, c/o I.A.L. St. George's, Grenada, B.W.I.

VP3MC. Post Office Telegraphs, 113K Campbellville, Demerare, B. Guiana.

VP5DM. Box 13, Kingston II, Jamaica.

VSSAD. Box 124, Seria, Brunei.

VU2CI. Norman Wilkinson, 12B Waltair Park, Waltair, Visakhapatnam, Andhra, India.

YAIPIB. via KH6OR.

YN1AB. P.O. Box 44, Managua, Nicaragua.

ZCSAF. N. M. Fender, R.A.F. Labuan, British North Borneo.

ZDIPB. A.P.O. 3,000, Freetown, Sierra Leone.

ZS3T. P.O. Box 267, Walvis Bay, S.W. Africa.

7G1A. via OK1PD.

9G1CZ. Box 128, Dunkwa, Ghana.

9K2AL. Lotte Morse Elmahde, P.O. Box 1947, Kuwait, Persian Gulf.

The Radio Society of East Africa has announced the following new QSL Bureau addresses:

VQ3. P.O. Box 2387, Dar es Salaam, Tanganyika.

VQ4. P.O. Box 30,077, Nairobi, Kenya.

VQ5. P.O. Box 1,803, Kampala, Uganda.

FOUR METRES



AND DOWN

BY F. G. LAMBETH (G2AIW) *

New Records on 144, 220, 420, 1250 & 10,000 Mc/s

JUNE 14, 1959, will long be remembered as the day on which Italian stations were first heard and worked on 2m, so raising the European record for the band to more than 1,000 miles.

G5NF (Farnham, Surrey) and I1KDB (Naples) are the new record holders with a phone QSO over a distance of 1,084 miles, an improvement of 140 miles over that established by G13GXP and OK1VR/P on October 27, 1958. G5NF raised I1KDB at 10.25 G.M.T. and worked IISVS (Vetralla, Viterbo, north-west of Rome) soon after the record breaking contact. IISVS also had QSOs with G3MEV, G4PS, G6ZP, G6OU, G3NR and G3HAZ, and was heard by G3JWQ, G5YV, GW2HIY and G13GXP. G2AHL/M on his way to the Longleat Mobile Rally was receiving IISVS's phone signals at up to S7-8 while travelling at 50-60 m.p.h. Unfortunately, repeated calls were of no avail.

The mode of propagation of the signals between Italy and the British Isles appears to have been by sporadic E, according to the Radio Research Station at Slough, which reported that sporadic E was the most intense for a very long time. Italian f.m. stations on about 100 Mc/s were being received by this means at about the same time as the IIs were coming through on 144 Mc/s. There was no evidence of unusual tropospheric v.h.f. propagation on June 14.

G3HAZ reports that IISVS has two transmitters; one running 300 watts input to a 4-65A feeds a 13 element Yagi. The other runs 100 watts to an 829B and a 10 element Yagi. Both transmitters operate on 145-340 Mc/s. For reception, an American Tapetone converter feeds into a Geloso 207. IISVI (Rome), who was operating IISVS on June 14, runs 100 watts input to an 829B on 145-350 Mc/s.

New World Record on 420 Mc/s

On June 12, 1959, G3KEQ (Sanderstead) worked SM6ANR (Gothenburg)

on 420 Mc/s for a new world record of 651 miles. I1WAL (Genoa) had a contact with FA9UP (Algiers) on July 16 at 612 miles.

New World Record on 1296 Mc/s

On June 14, 1959, W6DQJ/6 (Mt. Abel) and K6AXN/6 (Ball Rock, 15 n.w. of Corning, Calif.), both operating portable on 1296 Mc/s, set up a new record for this band with a contact over a distance of 400 miles. Reports of RST569 and 559 were exchanged. Contact was by tropospheric propagation but signals faded out before 08.50 Pacific (local) time.

The crystal controlled 2C39 transmitters each delivered 10 watts output to 4 ft. parabolas with vertically polarized dipoles. Crystal controlled converters fed narrow band main receivers.

From the August issue of QST, it is learnt that the two mountain locations are at the extreme northern and southern ends of the San Joaquin Valley but are far beyond the line of sight, so communication is possibly only during the extreme tropospheric bending of the morning hours. W6DQJ says that in all his experience with mountain expeditions on 144, 420 and 1296 Mc/s he has never known a time when signals were not at their best between 07.00 and 10.00.

New World Record on 10,000 Mc/s

HB1FU (Santis) and HB1JP (Chasseron) raised the world record for 10,000 Mc/s to 139 miles on July 18, 1959, with a QSO lasting between three and four hours. Signals were better than S9 each way.

New Record on 220 Mc/s

Although 220 Mc/s is not allocated to U.K. amateurs, members will be interested to learn that KH6UK and W6NLZ made contact over the 2,540 miles path between them on June 22. Propagation was by tropospheric ducting.

KH6UK and W6NLZ, who already hold the 144 Mc/s record, adopted the same tactics as in their earlier tests but success on this occasion came after only five nights. Liaison contact was first established on 14 Mc/s and KH6UK's 222 Mc/s signals were heard as soon as he changed frequency but it took more than an hour, due to poor conditions, to raise him again on 14 Mc/s to tell him so! It took another hour for KH6UK

to get his v.h.f. receiving equipment working before two way contact could be established. The QSO lasted 53 minutes. S.s.b. was used part of the time.

A further contact was made on June 30 when KH6UK was also heard by W6WSQ, 30 miles inland from W6NLZ.

It will be interesting to see whether they succeed in making contact on the higher frequency bands.

International V.H.F./U.H.F. Convention

There was an attendance of 117 at the Fifth International V.H.F./U.H.F. Convention held in London on May 30, 1959.

During the afternoon, Mr. I. M. Ross of the Services Electronic Research Laboratory Extension (Admiralty) lectured on "Parametric Amplifiers," Dr. T. R. Kaiser of Sheffield University on "Meteor Scatter Propagation" and Mr. V. Hartopp of J-Beam Aerials Ltd. on u.h.f. beam arrays.

F3SK's completely transistorized 2m transmitter - receiver aroused much interest. F3SK, F9CQ, G3HBW and G3LTF were the prize winners in the exhibition of equipment which was judged by Dr. J. A. Saxton.

The chair at the dinner in the evening was taken by Mr. L. E. Newnham, G6NZ, Immediate Past President.

Among those who travelled long distances to be present were F3SK, F8NH, F8MX, F9CQ, GM3DIQ, GW3MFY, GW8SU and GW8UH.

More Two Metres News

B.R.S.3856 (Petts Wood, Kent) heard IISVS on June 14 by chance as, having missed GB2RS on 3-6 Mc/s he decided to listen on 2m. A foreign station just higher in frequency proved to be IISVS calling G3EJO and subsequently working G5NF! The Italian station was S8 on peaks with rapid fading to zero. Later, PA0LO was logged. A.1491 (Palmer's Green) heard IISVS calling G3AJP at 11.40 G.M.T. and G3EJO at 11.50 on June 14. At 12.10 approximately IISVS was heard working G5NF. On June 12/14 seven PAOs and two ON4s were heard at about S8. During the early morning of June 15/17 PAOs, and three DLs were identified—much other EDX was heard but not identified. G3CO was heard later to say that whilst all the DX was being worked he could only hear PA0LO!

A.1491 has had a QSL card from IISVS, and a letter from IISVI who was operating IISVS during the sporadic E opening on June 14. IISVI states that on July 5

* V.H.F. Manager, 21 Bridge Way, Whitton, Twickenham, Middx.

IIWAL (Genoa) and IIBBB (Bergamo) worked Algeria on 2m. IICZE and IIZUP worked an EA in Barcelona whilst IISVI (Rome) himself contacted YU3APR. About 100 stations are active on v.h.f. in Italy.

A.1491 says that July 4 was excellent to the north and G6ZP was heard for a new county. Now that summer conditions are with us it is clear that the most outstanding signal from the north is G3MED. Barely an evening goes by without his presence! G3CCH, G3JWQ and G5YV come next in strength. G3MNO and G2HOP are other good northern signals. G3HAZ (Birmingham 31) raised IISVS only to have him fade out and not return!

G3KHA (Bristol 4) has been active on 2m almost every day for the last four years mainly on skeds, the present ones being daily with G8VZ and G5LK. Low activity forced G3KHA to try the h.f. bands, but on Whit Sunday SM and OZ stations were worked. On the 14th G3KHA heard IISVS at S9. The Italian was stronger than the Longleat Rally station (G3FKO/A) on the same frequency! G3KHA called many times without success but heard him working G4PS, G6OU and G6ZP. The beam bearing did not appear to matter much, so it confirms that the signals were very high angle. G3KHA uses 80 watts on 145.5 Mc/s to a 5-over-5 slot beam.

G3AJP (Gt. Yarmouth) was unlucky enough not to work IISVS although called by him. The signal was very erratic being RS5/0-6/0. It is too bad that a QSO did not materialize. G3EJO (Birmingham) is another unlucky one. He first heard IISVS at 12.0 when IISVS called G3AJP. G3EJO had just finished calling CQ and wondered whether possibly this was a mistaken identification of his own call-sign. Accordingly CQ was called again phonetically: IISVS then called G3EJO for about three minutes. Contact however was not established properly and after several attempts to get a report G3EJO next heard the Italian calling G5NF.

G2HDR (Bristol 9) says the great talking point at the Longleat Rally on June 14 was the QRM from IISVS with the talk-in station. Although the rally station did not hear the Italian, GW3ATM and G3KHA reported that he was being received by them, and they closed down for a time on that account. Both these stations reported his telephony at RS58/9.

GW3MFY (Bridgend) reports that G3FEX (Storrington) was a very good signal when worked on the 13th with no other station audible! Conditions recently have appeared to improve late in the evening, often after midnight. Is this really due to conditions or the end of TV programmes? What obviously was conditions was GW8SU's experience between 2-3 a.m. on June 14 when he reported hearing DLs and PAs calling CQ with no one else going back to them. His own repeated replies brought no answers! GW3MFY suggests that those working DX should quote the DX stations frequency to give others a change to hear the exotic stuff. The "big guns" might also care to mention that GW stations are operating if they hear them on the band.

An interesting report on the Italian signals comes from GW2HIY (Anglesey) who heard IISVS from 11.00/11.45 G.M.T. at S9+ and called him during all that time, but without success.

EI2W did not hear the Italians, and when first informed was a bit sceptical, as indeed anyone might well be! However, he made up handsomely for any losses in that direction by working OZ5AB on June 14 at 01.50 for the first EI/OZ contact. DL3VJ and DJ1DC were also worked during that session. OZ2ES and OZ9SW were heard. G1GXP (Kilkeel) has been working European DX at the low end of 2m. He heard IISVS—what a record that would have been! Better luck next time!

G3MED (Northwich) reports that G3LNP (Shropshire) is now on 2m with s.s.b. G3MED's new p.a. using a 4X150A is working well with 150 watts input on A3 and s.s.b. G3CCH and G3MED are planning to operate s.s.b. on 145.6 Mc/s and are hoping to arrange skeds with SM, OZ and PA.

G3MED worked GM3HLH/A on several evenings with signals ranging from 589 down to 559. On July 15 there was an aurora, and GM3LAV and GM3FGJ were worked at 56. GM4HR was also 56 but was not raised. F8MX was coming through 58 on the 15th whilst working G6NB and G2CIW.

G3KEQ (Sanderstead) worked DL1RX at S8 on June 12 followed by SM6ANR (599 on 2m and 569 on 70 cm.). SM6BTT (599) followed on 2m. G3KEQ heard both IISVS and I1KDB peaking to S9 on the 14th.

G5DW (Ashcott) found the Mobile Rally at Longleat enjoyable, and expresses thanks to the Bristol Group for the very excellent organization. On the subject of activity he says it is quite surprising so many chaps are content to "natter" locally, and don't always listen carefully for calls, because they imagine they don't get out very far. This is certainly an argument in favour of "calls heard" lists.

G3JR (Barnes) heard OZ5AB on June 14 but QRM prevented what might have been a very much sought for QSO. The same day G3JR worked ON4, DJ/DL and PA0. DL0IK was heard at 549 (and has lately been reported by some others, including GW2HIY).

G3DIV (Eastbourne) found conditions during the Second 144 Mc/s Field Day on July 5 fair, although they fell off rapidly towards the north, with northern portables few and hard to work. A spell of good conditions to the east ushered in the contest: 10 PAs, four ON4s and six F's were worked during the initial period. Activity in general appeared to be poor, however. DJ2ZP was heard calling "CQ Rhineland" but was not raised. The best mobile QSO was with GW2HCJ/M, 10 miles south of Cardigan. The best portable from the north was G3AYT/P with GW3MED/P second.

G4LX (Newcastle) says that May 23/5 were good for tropospheric contacts with SM, OZ, ON4, PA0 and DL. The band never seemed to close and many QSOs were made. The beacon station DL0IX is a good marker for such conditions. At about the time of the Italian opening, G3LHA (Coventry) heard HB1CP.

G4LX (Newcastle-on-Tyne) observed the aurora at 15.45 G.M.T. on July 15. Beacon stations DL0IK (145.8 Mc/s) and DL3YBA (145.41 Mc/s) were S7. PA0NL was heard at S7 calling "CQ aurora" but getting no QSOs. At 16.37 G4LX had an aurora QSO with G3KEQ (S7) and at 16.50 with G2JF. This phase died out at 17.00

G.M.T. Aurora developed again at 22.30 G.M.T. but no contacts were made. Stations heard with the beam n.e.e. were PA0TP, PA0NL, ON4BZ, GM3EGW, GM3FGJ, GM3LAV, G3CCH, G3FZL, G3DVK, G3MED and G5YV. The German beacons were not heard. Previous aurora dates this year with no 144 Mc/s results were June 27 (16.55 G.M.T.), June 28 (15.30) and June 29 (16.00).

G3JR (Barnes) heard G3DVK, DL3YBA, G3KEQ, PA0TP, GW8SU and G3CCH during the aurora at 22.48-22.59 G.M.T. on June 11.

GW2HIY (Holyhead) worked GM3-HLH/A on July 4 and 10, GM3EGW on July 8 and GM3FGJ on July 10. GD3UB was worked for the first time on July 4 so the country total is rising! GW2HIY is on most evenings between 23.00-24.00 B.S.T. on 145.360 Mc/s, with an input of 40 watts to a 832. The aerial is a 6-over-6 slot beam at 45 ft.

G3JGJ (Moretonhampstead) has only heard six stations on 2m since moving to his present QTH. GC2FZC, GW3MFY and G3MU have been worked. G3JGJ is moving to a higher point over 1,000 ft. a.s.l. with a clear path to London and the south generally; with a mast of 60-80 ft. there will be a clear path all round except for a few degrees each side of north. G3JGJ is on the band from 18.00/19.15 every evening and at 10.00 on Sundays. The frequency is now 144.1 Mc/s. If anyone has an a.c. generating plant, G3JGJ is looking for one!

B.R.S.20284 reports that GW3LNZ, formerly of Liverpool, is now at Sarn. He has an excellent location 600 ft. a.s.l. Tests on 2m are about to commence, and reports and QSOs will be appreciated. B.R.S.20133 has passed the R.A.E. and we can expect to hear this very assiduous listener in the near future! Congratulations.

G5BM (Highnam, Glos.) reports that he has had the following auroral QSOs this year: March 28—GM3DGI (18.10 G.M.T., RST561); March 28—GM4HR (15.35, RST55A), G4LX (15.42, 55A), GM3-HLH/A (15.54, 57A) and GM3DGI (16.10, 55A).

GW3MFY (Bridgend) found the period to July 20 very interesting but says that activity to the east of South Wales (and especially the London area) has been very low, and the beam has consequently been elsewhere for most of the time. He suggests there should be an R.S.G.B. certificate for c.w. work. GW3MFY noticed the aurora on July 15/16 at 00.15 B.S.T. when GM3FGJ and GM3LAV were heard with the beam n.e.e. On the previous night (July 14) G3JGJ was heard (RST226) with the beam south and it was only the following evening that aurora was suspected!

G3HRH, while portable near Bude, Cornwall, worked EI2W for the first EI/Cornwall contact on this band. Stations in the Midlands, Home Counties, Wales and Ireland were worked from a portable location near Bideford, Devon, all on phone, during the weekend of June 20-22.

Two Metre News from Scotland
GM2FHH (Aberdeen) says that during the opening of May 23 about a dozen PA0 stations were heard, but could not be worked from Aberdeen. However, ON4ZH and ON4FC were worked the following day and many DLs heard. Is anyone interested in forward scatter tests with GM2FHH?

News from Norway

LA9T (Moss, Oslo) reports there was an auroral opening on 2m on May 15 and LA8MC heard SM6PU by this mode. On May 16 a tropo opening brought QSOs with OZ; whilst that of May 23 resulted in contacts between Norway and OZ and SM stations. On the 29th OZ and SM stations were again worked.

Seventy Centimetres

G2XV supplies the following frequencies: 433-9, G3KPT (West Bromwich, Staffs.); 434-35, G3GDR (Abbots Langley, Herts.); 434-65, G3JZG (Willenhall, Staffs.); 435-65, G3HBW (Bushey, Herts.); 434-7, G3KFD (Kingswinford, Staffs.); 434-7, G3KHA (Bristol); 434-74, G3HAZ (Birmingham); 435-020, F9CQ (Paris); 435-05, G4KD (N.W. London); 435-1, G2XV (Cambridge); 435-24, G3JMA (Harlow, Essex); 435-6, G2CNT (Longstowe, Cambs.); 436-0, G2WJ (Dunmow, Essex). G3KHA had some good QSOs during the 420 Mc/s Contest on May 24. He runs 40 watts on 434-7 Mc/s to a 20 element stack. An A2521 has been tried in the r.f. stage of the 70cm. converter and G3KHA thinks it has the edge on a 6AM4. G3HAZ (Northfield, Birmingham) had 12 contacts during the Contest, the best being G2XV, G2HDJ and G3KEQ.

G3EIV hopes to be operating on 420 Mc/s and 1250 Mc/s from high ground around Wells, Somerset, with a c.c.

transmitter and superhet receiver during the European V.H.F. Contest on September 5-6.

1250 Mc/s

G3FUL (Luton) reports more tests on 1250 Mc/s. Using the same gear as on previous occasions, strong signals were received at Galley Hill from Gamlingay in Cambridgeshire on July 5. This was the seventh county. G3BVU/P had the transmitter at Gamlingay and G3JZW/P used a 2m link during the Contest. G3FUL had a receiver at Galley Hill. The distance is 30 miles.

Four Metres

G4LX reports several Italian commercials heard on 71-73 Mc/s. The most interesting was IRL23 at 22.00 G.M.T., a steady RST569 c.w. signal. Sporadic E was very intense at the end of June and Italian, Russian, Polish, Czech and German broadcast stations were heard at S9 between 48-88 Mc/s. The upper limit is higher than previously observed. It seems that G4LX's location is well situated for this range of reception, but badly situated for sporadic E reception of French amateurs on 72 Mc/s. They have only been logged once (on June 14) in spite of subsequent intense sporadic E conditions.

Six Metres

G4LX heard ZE2JV via tropical E on May 18, June 19 and 22, July 1 and 2. Particularly interesting was the reception on July 1 as ZE2JV seemed to be received

by tropical E into Europe and then sporadic E "hop" after reaching Europe.

* * *

Reports for the next issue should be sent to G2AIW as soon as possible

Month on the Air continued from page 18

HB9VW plans to operate from Afghanistan on 21 Mc/s c.w. during August.

ZD9AC is active from Tristan da Cunha again. He uses a v.f.o. and seems to have a preference for operating about 07.30 G.M.T.

HV1CN is building new gear with which to put the Vatican City on s.s.b.

AC3SQ is operating as AC5SQ from Bhutan, and is rumoured to be on every Sunday at 12.00 G.M.T. between 14,180 and 14,190 kc/s.

9N1AC has been licensed in Nepal and W5UKK worked him on 14,308 kc/s between 02.00 and 02.30 G.M.T. on July 28.

YA1PB and YA1IW are planning a trip to AC5, VU4 and VU5 in November. They have permission to operate from these countries, and are at present assembling suitable equipment to take with them.

* * *

Please note the new address, to which contributions should be sent as quickly as possible after the arrival of this BULLETIN. Keep up the good work and cheerio for now.

Scandinavian Activity Contest 1959

THE C.W. Section of the first Scandinavian Activity Contest will take place between 15.00 G.M.T. on September 19 and 18.00 G.M.T. on September 20, 1959. The Phone Section will take place between the same times on September 26 and 27. Entries must be posted not later than October 15, 1959, to the Contest Committee, S.R.A.L., P.O. Box 306, Helsinki, Finland.

V.H.F. QSY

Following the rearrangement of the British Isles Two Metre Zone Plan announced in March, 1959, members who wish to acquire crystals for their new zones or have crystals for disposal on an exchange basis, are invited to send details for inclusion in this space. Requests should be addressed to "V.H.F. QSY," R.S.G.B. BULLETIN.

Crystals Offered

By G3FKO, 15 Larksleaze Road, Longwell Green, Bristol. 6021-1 kc/s (145-5 Mc/s) $\frac{3}{4}$ in. spacing, 8060 kc/s (145-08 Mc/s) $\frac{3}{4}$ in. spacing, 8073-33 kc/s (145-32 Mc/s) FT243 type, 8100 kc/s (145-800 Mc/s) FT243 type and 24-220 Mc/s (145-320 Mc/s) Q.C.C. B7G overtone type.

By G3NT, Hilton Grange, Northallerton, Yorks. 8007-69 kc/s (10X type), 8015 kc/s and 8018 kc/s (FT243 type).

Crystals Required

By G3FKO, as above, one 8 Mc/s type and one Q.C.C. B7G 24 Mc/s type for Zone 2.

By G3NT, as above. Crystals between 8083 and 8100 kc/s for Zone 8 (not 8092 kc/s).

R.S.G.B. Certificates and Awards

MEMBERS are reminded that all claims for R.S.G.B. Certificates and Awards should be sent to the Society's Honorary Certificates Manager, Mr. G. E. Verrill (G3IEC), 10 Seahorse Street, Gosport, Hants. A leaflet dealing with R.S.G.B. Certificates and Awards can be obtained on application from R.S.G.B. Headquarters.

Claims from United Kingdom members for the W.A.C. certificate should also be sent to Mr. Verrill.

Radio Amateurs' Examination

COMPREHENSIVE revision notes for the use of members who are preparing for the City and Guilds of London Institute examination on Saturday, October 3, are available from Headquarters, price 1s. per set, post paid.

GB2RS SCHEDULE

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

Frequency	G.M.T.	Location of Station
3600 kc/s	10.00	London
	12.00	Yorkshire
145-55 Mc/s	11.15	Beaming south-east from Leeds
	11.30	Beaming south-west from Leeds
	11.45	Beaming north from Leeds
145-3—	12.00	Beaming north from London area
145-4 Mc/s	12.15	Beaming west from London area

Society News

Birthday Honours List

CONGRATULATIONS are extended to the following members whose names appeared in The Queen's Birthday Honours List:

Group Captain Rowley Scott-Farnie (G5FI), of London, S.W.1.	C.B.E.
A. M. Beresford-Cooke (B.R.S.15683), of London, N.13.	O.B.E.
Lt.-Cdr. H. Punch (G6UR), of Bath, Somerset.	M.B.E.

G/Capt. Farnie is Managing Director of Aeradio Ltd., Mr. Beresford-Cooke is in the Engineering Department of I.T.A., and Lt.-Commander Punch is the Commanding Officer of No. 2 Wireless District R.N.R.

The announcement that Air Vice-Marshal L. Dalton-Morris is to become a K.B.E. will have been read with special interest by all who served with or under him during the 1939-45 war. Air Vice-Marshal Dalton-Morris is A.O.C.-in-C. Signals Command.

London Meetings

MEETINGS will be held at the Institution of Electrical Engineers, London on the following Friday evenings:

October 16, 1959	"Practical Applications of Transistors for the Radio Amateur," by Newmarket Transistor Co. Ltd.
January 22, 1960	Presidential Address.
March 11, 1960	Subject to be announced later.

Buffet tea will be served from 6 p.m. and meetings will commence at 6.30 p.m.

The Annual General Meeting will be held at Over-Sea House, St. James's, London, S.W.1, on Friday, December 11, 1959.

Top Band

USERS of Top Band are asked to avoid the following frequencies, all of which are used by the Danish Administration:

1806, 1813, 1834, 1988, 1995 kc/s.

Care should also be taken to avoid interfering with United Kingdom coast stations on 1827, 1834, 1841, 1848, 1855, 1856, 1869, 1883, 1911, 1925 kc/s and with British ships on 1953 and 1981 kc/s.

Users of Top Band frequencies should comply immediately with any request made by a coast station to close down. The "crossing of swords" with stations in the Marine Service can do nothing but harm to the amateurs' cause.

Amateur (Maritime Mobile) Licence

FOLLOWING the news that the Federal Communications Commission had agreed to allow United States amateur stations aboard ship to use any authorized amateur band from 7 Mc/s to 148 Mc/s when on the high seas in Region II, the Society wrote to the Post Office to ask whether the facilities offered by the present, highly restricted, and in consequence little used, Amateur (Maritime Mobile) Licence could be extended.

The Post Office have now notified the Society that they are still unable to agree to the use of frequencies below 28 Mc/s for this type of licence. The Post Office have not explained why they cannot meet the wishes of the small body of licensed amateurs whose profession is the sea but it is presumably because of pressure from the operating companies.

Morse Tests and Radio Amateurs' Examination

THE G.P.O. is again arranging to conduct technical examinations and Morse tests for the Amateur (Sound) Licence in the autumn, provided sufficient applications are forthcoming.

The technical examination will take place on Saturday, October 3, 1959, from 2 to 5 p.m., at the following centres:

Armour House, St. Martin's-le-Grand, London, E.C.1.
Radio Surveyor's Office, Ministry of Transport and Civil Aviation, 2 Bute Place, Cardiff.

Radio Surveyor's Office, Customs House, Dock Place, Leith, Edinburgh 6.

Applications to sit the examination, accompanied by a remittance for the entrance fee of 25s., must reach the Wireless Telegraphy Section, Radio Services Dept., Union House, St. Martin's-le-Grand, London, E.C.1, **not later than September 5, 1959.**

Morse Tests will be held at the Head Post Offices in Birmingham, Cambridge, Derby, Leeds and Manchester during the week September 14-18, 1959, provided there are sufficient candidates. Application forms may be obtained from the Radio Services Dept., Radio Branch, Post Office Headquarters Building, St. Martin's-le-Grand, London, E.C.1. Completed application forms, to which the entrance fee of 10s. must be affixed in stamps, must be posted to the Wireless Telegraphy Section, Radio Services Dept., Union House, St. Martin's-le-Grand, London, E.C.1, **to arrive not later than September 1, 1959.**

Geneva Conference

MR. L. E. NEWNHAM, G6NZ (Immediate Past President) is representing the Society on the British delegation to the Ordinary Administrative Radio Conference which opened in Geneva on August 17, 1959. Mr. John Clarricoats, O.B.E., G6CL (General Secretary) is leading the Region I I.A.R.U. team of observers.

The Conference is expected to last until December.

SOUTH WALES REGIONAL MEETING

Park Hotel, Cardiff

Saturday, September 26, 1959

Programme:

Assemble - - - -	2 p.m.
Trade Exhibition opens -	2 p.m.
Business Meeting - -	2.30 p.m.
High Tea - - - -	5 p.m.
Raffle - - - -	6 p.m.
Lecture by R. W. White, B.Sc., F.Inst.P., M.I.E.E., "Some Aspects of Forward Scatter Propagation" - - - -	6.15 p.m.

The Council will be represented by Messrs. W. R. Metcalfe (G3DQ), A. C. Williams (GW5VX) and E. W. Yeomanson (G3IR).

Inclusive cost 13/6. Cost for ladies accompanying members 7/6. Last date for bookings, September 19, 1959. Applications for tickets should be sent, with the appropriate remittance, to D. C. J. Green, GW3MRI, 36 St. Augustine Road, Heath, Cardiff.

THE Exhibition Committee is looking for an outstanding home-built transmitter for display at this year's Radio Hobbies Exhibition as an example not only of craftsmanship but also of contemporary trends in transmitter design. Members who have built equipment likely to meet the high standards sought or who know of other members who have constructed such transmitters are invited to send brief details to the Committee at Headquarters for consideration.

R.S.G.B. Bulletin

ALTHOUGH the dispute in the printing industry has been settled it will be some little time before the normal BULLETIN publishing programme can be resumed. It is anticipated that the August issue will be published about September 15, the September issue on October 9, the October issue on November 3, the November issue on November 26, and the December issue on December 18. These dates should be regarded as approximate.

Bulletin Advertisers

MEMBERS are advised that the Society's Advertisement Manager can only intercede on their behalf if complaints of poor service, etc., are brought promptly to his notice.

Silent Keys

HUGH MCCONNELL (GM2ACQ)

The death occurred on July 25, 1959, of one of Scotland's best known and best liked radio amateurs—Hugh McConnell (GM2ACQ) of Alloway, near Ayr.

The news of his passing will be received with sorrow by amateurs in many parts of the world who will remember him especially for his ever-cheerful voice and for his great love of his native land. Living within a few hundred yards of the birthplace of Robert Burns, Hugh McConnell could be depended upon to sing the praises of Scotland's most famous poet on every possible occasion.

Mr. McConnell served on the Council of the R.S.G.B. during the period 1951-1953 and since then he had continued to take a great interest in Society activities. Just before his death he and Mrs. McConnell had been making active preparations for the O.R.M., which is to be held in Ayr in September.

Hugh kept an ever open door in his beautiful home in Shanter Way and it was his pleasure over the years to entertain radio amateurs from many lands and from many walks of life. The key and the microphone at GM2ACQ are now silent but the memory of that call will linger on for many years to come.

What more fitting epitaph to a Land of Burns man than the following words written by Burns himself?

*"An honest man here lies at rest,
As e'er God with his image blest;
The friend of man, the friend of truth,
The friend of age, and guide of youth;
Few hearts like his, with virtue warmed,
Few heads with knowledge so informed;
If there's another world, he lives in bliss;
If there is none, he made the best of this."*

Heartfelt condolences are offered to Mrs. McConnell (Bessie to all her friends) and to her daughters Allison and Rosemary.

The Society was represented at the funeral by Mr. D. Macadie, GM6MD and Mr. J. Wilson, GM3KJF.

J. T. UPPERTON (B.R.S.6852)

It is with regret that we report the death of Mr. J. T. Upperton (B.R.S.6852) of Shoreham-by-Sea, Sussex, on June 27, 1959, at the age of 54. Mr. Upperton was a well-known member of the Worthing and District Radio Club and only a few days before his death was looking forward to attending the annual "Bucket and Spade" Party.

Mr. Upperton was a staunch supporter of the R.S.G.B. and a source of encouragement to many others in their early days of Amateur Radio.

To his wife and family we extend our deepest sympathy.
A. J. S.

HANS B. GORTZ (PA0GN)

The death occurred on June 4, 1959, of Hans B. Gortz (PA0GN) at the age of 55 years. A member of the R.S.G.B. since 1948, PA0GN was well known for his DX achievements. He was a founder-member of V.R.Z.A. and its first Secretary. For the past eight years he produced a weekly column entitled "How's DX." Sympathies are extended to his family in their loss.

Courses of Instruction for the Radio Amateurs' Examination

COURSES of instruction in preparation for the Radio Amateurs' Examination in May 1960 and for those who wish to study radio have been arranged at the undermentioned centres.

Bradford Technical College, Central Hall, Bradford 5. Enrolment for the R.A.E. course will take place on September 16, 17 and 18, 1959. Classes will be held on Thursdays from 7—9 p.m. Further details may be obtained from the College (Telephone no. Bradford 21748).

Brentford Evening Institute, Clifden Road, Brentford. Enrolment for the following courses will take place from September 14-17:

- (i) *Radio Amateurs' Examination* (7-9 p.m. on Wednesdays).
- (ii) *Morse Code* (7-9 p.m. on Tuesdays).
- (iii) *Radio Servicing* (7-9 p.m. on Tuesdays and Thursdays).

The classes will commence during the week beginning September 21.

Ilford Literary Institute (High School for Girls), Cranbrook Road, Ilford, Essex. (Adjacent to Gants Hill Station, Central Line). Two classes have been arranged by the East London Group in association with the Essex County Council:

(i) *Radio Amateurs' Examination.* An eight month course for those intending to take the R.A.E. in May 1960. (Wednesdays, 7.15—9.15 p.m.).

(ii) *Morse and Codes of Practice.* A six month course for those who wish to take the G.P.O. Morse Test for an amateur licence. Arrangements have been made for those who, in the opinion of the instructors, have reached the required speed to be tested at the Institute by a Post Office representative.

The fees for students living in the Essex County Council area will be 30/- for the R.A.E. Course, 20/- for the Morse and Codes of Practice Course or 35/- for the two courses. Students from other parts of London will be admitted as out-county students provided the local authority is notified. Enrolments will take place on September 7-10 from 7-8.30 p.m. but those who intend to enrol are advised to send their names to C. H. L. Edwards (G8TL), 28 Morgan Crescent, Theydon Bois, Essex, at once so that a place may be assured. Classes commence during the week beginning September 21.

Islington L.C.C. Men's Evening Institute, Montem School, Hornsey Road, Holloway, London, N.7. The following courses will commence during the week beginning September 28:

(i) *Radio Amateurs' Examination.* (Mondays 7-9 p.m., repeated at the same times on Tuesdays and Wednesdays). Instructors: S. H. Iles (G3BWQ), P. F. Bernal (G3KQZ) and R. C. Hills (G3HRH).

(ii) *Morse.* (Mondays, 9-10 p.m., repeated at the same times on Tuesdays and Wednesdays). Instructors: L. Barber and A. Ralph.

Enrolments will take place during the week September 21-25 between 7.30-9 p.m. but applications should be made in the first instance to A. W. H. Wennell (G2CJN), Hon. Secretary, Grafton Radio Society, 145 Uxendon Hill, Wembley Park, Middlesex. The fee will be 20/- for one course or 22/6 for the two.

Northwood Evening Institute, Potter Street School, Northwood Hills, Middlesex. The following courses will be held during the coming session: (i) *Radio Amateurs' Examination.* (ii) *General Radio Theory.* (iii) *Practical Radio.* (iv) *Morse Code.*

Enrolments will take place on September 14-16 from 6.30-8.30 p.m.

St. Albans College of Further Education, Hatfield Road, St. Albans. The following courses in preparation for the examinations for an amateur licence will commence during the week beginning September 28:

(i) *Radio Principals and Practice* (Course No. 138). Tuesdays, 7.30-9.30 p.m.

(ii) *Morse Code* (Course No. 139). Mondays, 7.30-9.30 p.m. Enrolments will take place on September 14-17 from 6.30-9 p.m. Fees: students under 19 years of age—£1; over 19—£2 for the two courses.

Wembley Evening Institute, Copland School, High Road, Wembley. Enrolment for courses for those wishing to take the Radio Amateurs' Examination and the Morse test will take place between 7.15-9.15 p.m. on September 14-17. The Morse Practice class will be between 7-8 p.m. and the Radio Theory class between 8-10 p.m. on Mondays.

Rules for Region I I.A.R.U. V.H.F. Contests

FOUR official v.h.f. contests shall be held each year under the auspices of the Region I I.A.R.U. V.H.F. Committee but each national society shall retain the right to organize such extra contests as it may see fit. The first three official contests each year shall be national events designed to increase v.h.f. activity in the countries concerned but foreign amateurs shall be free to take part.

The fourth official contest will be known as the European V.H.F. Contest and will be arranged by a different Region I society each year. The sequence will be Austria, Belgium, Denmark, France, Germany, Great Britain, Holland, Italy (in 1959), Yugoslavia, Sweden and Switzerland.

SAMPLE CONTEST LOG SHEET

Contest Date Claimed Score
 Section Call-sign
 Name
 Home address
 Location of station Latitude Longitude
 Height above sea level in metres
 Transmitter Input power watts
 Operating frequencies Crystal or v.f.o.?
 Receiver Aerials

Date/ Time G.M.T.	Call- sign of station Worked	Serial Sent	Number Recd.	QTH	Emission	Distance km.	Points Claimed

Declaration: I declare that this station was operated strictly in accordance with the rules and spirit of the contest and I agree that the ruling of the organizing society shall be final in all cases of dispute.

Date Signed

RULES

1. **Eligible Entrants.** All licensed radio amateurs resident in Region I. Multiple operator entries will be accepted provided only one call-sign is used.

2. **Contest Sections.** Each contest will comprise the following sections:

- (i) Fixed stations—144 Mc/s.
- (ii) Portable/Mobile stations—144 Mc/s.
- (iii) Fixed stations—420 Mc/s.
- (iv) Portable/Mobile stations—420 Mc/s.
- (v) Fixed stations—1250 Mc/s.
- (vi) Portable/Mobile stations—1250 Mc/s.

Portable/mobile stations must operate from the same location throughout the event.

Fixed stations must give their exact locations but portable/mobile stations may give their locations in distance and direction from the nearest town. All operators must be licensed. Licence regulations, particularly regarding power input, must be strictly observed.

3. **Dates of Contests.** The contests will take place during the first full weekends of March, May, July and September each year.

4. **Duration of Contests.** The contests will commence at 17.00 G.M.T. on the Saturday and will end at 17.00 G.M.T. on the Sunday.

5. **Number of Contacts.** Each station can be worked once only on each band, whether fixed, portable or mobile. If a station is worked again during the same contest on the same band only one contact will count for points but any duplicate contacts should be logged without claim for points and should be clearly marked as duplicates.

6. **Types of Emission.** Contacts may be made on A1, A2, A3, A3a or F3.

7. **Contest Exchanges.** Code numbers exchanged during each contact shall consist of the RS or RST report followed by the band identification letter (A for 144 Mc/s, B for 420 Mc/s and C for 1250 Mc/s) and a

serial number commencing at 001 for the first contact and increasing by one for each successive contact. The locations of stations as defined in Rule 2 shall also be exchanged.

8. **Scoring.** Points will be scored on the basis of one point per kilometre. The final claimed score must be shown at the top right-hand corner of the first sheet.

9. **Entries.** Entries must be set out as shown in the example below. Entries for the first three contests must be sent to the national v.h.f. manager within two weeks of the contest, i.e. they must be postmarked not later than the second Sunday after the contest. Late entries will not be accepted.

In the case of the European V.H.F. Contest two copies of the entry must be sent to the national v.h.f. manager concerned postmarked not later than the second Sunday following the contest weekend. Not later than the fifth Sunday after the contest weekend, the v.h.f. managers will forward to the society organizing the contest one copy of each entry after examining the logs and certifying them to be acceptable to the best of their knowledge. The judging of the entries shall be the responsibility of the organizing society whose decision shall be final.

10. **Disqualification.** Entrants deliberately contravening any of these rules shall be disqualified. Minor errors may result in the loss of points.

11. **Awards.** The winner of each section will receive a certificate.

EUROPEAN V.H.F. CONTEST 1958

A TOTAL of 484 logs, including 26 check logs, was received for the 1958 European V.H.F. Contest organized by the Dutch national society, V.E.R.O.N.

The leading stations in each section were as follows: Section 1—DLICK (249 points), DJ3ENA (222), OK1HV (210); Section 2—OK1KKD (509 points), G5YV (321), IIAC (302); Section 3—OK2KEZ/P (570 points), OK1VAE/P (470), OK2OJ/P (380); Section 4—OK1SO/P (695 points), OK1KDF/P (497), HBIRG (454).

Only 10 British stations took part. G3HRH scored 109 points in Section 1 while G5YV had 321, G3JWQ 264, G2XV 210, G3JZG 205 and G5DF 124 in Section 2. G2DTP/P scored 185 points, G3KMT/P 140 and G3ION/P 74 in Section 3. The only U.K. entrant in Section 4, G3FD/P, scored 106.

The small entry from the U.K. contrasts sharply with the popularity of other v.h.f. contests. In this connection, it is perhaps worth pointing out that a British amateur could win this contest by working only U.K. stations—it is not necessary to work continentals in order to take part.

This year's contest is on September 5-6.

CONTESTS DIARY

September 5-6	European V.H.F. Contest National 144 Mc/s Open Contest National 420 Mc/s Open Contest National 1250 Mc/s Open Contest (details in this issue)
September 6	D/F National Final
September 19-20	Scandinavian Activity Contest (C.W. Section)
September 20	Low Power Field Day (details in this issue)
September 26-27	Scandinavian Activity Contest (Phone Section)
September 27	R.A.E.N. Rally (details in this issue)

October 3-4	VK/ZL DX Contest (Phone Section)
October 10-11	VK/ZL DX Contest (C.W. Section)
November 7-8	Second 1.8 Mc/s Contest
November 21-22	R.S.G.B. 21/28 Mc/s Telephony Contest
November 21-22	R.S.G.B. 21/28 Mc/s Telephony Receiving Contest
December 6	OK C.W. DX Contest

CONTEST NEWS



— RESULTS — REPORTS — RULES —

D/F Qualifying Events

THE leading entrants in the High Wycombe D/F Qualifying Event held on June 28 were Messrs. G. T. Peck (B.R.S.15402), E. L. Mollart (B.R.S.10977), N. B. Simmonds (B.R.S.21873) and H. Drury (B.R.S.5053). As Mr. Mollart had already qualified, Mr. Drury goes forward to the National Final.

In the Slade/Rugby event on July 12, the leaders were Messrs. D. H. Simmonds (Slade Radio), J. E. Smith (G3JZF) and J. Walley (B.R.S.18656).

Altogether 13 competitors have qualified for the D/F National Final on September 6. Copies of the rules will be sent to those concerned by the Derby and District Amateur Radio Society which is organizing the event on behalf of the Contests Committee.

First 144 Mc/s Field Day 1959

FOR the first time since its inception, this popular event was restricted to contacts made using c.w. only, as a result of the recommendation made at the I.A.R.U. Region I V.H.F. Managers' Conference, 1958. This, combined with the disappointing weather, served to reduce the number of portable stations competing but did enable several semi-DX contacts to be made which might not have materialized on 'phone. Those taking part made no adverse comment on the use of c.w. only. The centres of portable activity were in the North West Midlands and in the Home Counties, resulting in a great number of contacts over 100 miles.

The contest was won by G3MAR/P, the station operated by members of the Midland Amateur Radio Society, with a lead of nearly 2,000 points. Operating from a site near Birmingham the equipment used was a 24 watt transmitter with an 832 p.a. stage and a rather more complicated receiver than usual for a portable station, in that it used a 417A r.f. stage and a crystal mixer in a coaxial line feeding a cascode head amplifier.

The runner-up was D. C. Morris (GW2FVZ/P) of Caerwys, Flintshire, who scored 5,592 points using a modified BC950 transmitter with an 832 running at 24 watts input and a cascode converter into a BC348. The aerial was a 6-over-6 slot beam. The only mobile entrant was G5CP/M using his Hamobile equipment with which he is a very regular performer in v.h.f. contests.

Several contestants found great difficulty in converting miles to kilometres and in one case points were still claimed on a mileage basis. It would seem from this that more care must be exercised by contestants, both in reading the complete rules and in accurately calculating distances.

It is known that at least a further six portable stations were operating during the contest.

Check logs are acknowledged from G2FM/P, G3HBW and B.R.S.20133.

Posn.	Call-sign	Points	Posn.	Call-sign	Points
1.	G3MAR/P	7570	8.	G3ERD/P	3970
2.	GW2FVZ/P	5592	9.	G3FD/P	3790
3.	G3AYT/P	5182	10.	G3JZW/P	3200*
4.	G2DTP	5150	11.	GW3ATM/P	3067
5.	G3JWQ/P	5133	12.	G3LCH/P	1070
6.	G8GP/P	4569	13.	G5CP/M	1102
7.	G3EXX/P	4190			

* Disqualified—points claimed in miles.

Low Power Contest 1959

THE results of the Low Power Contest held on April 11-12, 1959 were as follows.

Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	G3BMY	1940	6	G6GH	380
2	G6VC	1760	7	G13HFG	363
3	G5LQ	1560	8	G13KYP	240
4	G3EUE	929	9	G3CWL	230
5	G3BY	450			

National 144 Mc/s Open Contest 1959

National 420 Mc/s Open Contest 1959

National 1250 Mc/s Open Contest 1959

THESE contests have been arranged to take place during the period of the European V.H.F. Contest on September 5-6, with a view to encouraging activity in the British Isles at that time. The general rules for Region I V.H.F. Contests will apply. Members who wish to enter the European V.H.F. Contest should submit *duplicate* entries with cover sheets made out in accordance with the sample entry on page 24 of this issue.

The details of the National Open Contests are as follows.

Duration. The contests will commence at 17.00 G.M.T. on Saturday, September 5, and end at 17.00 G.M.T. on Sunday, September 6, 1959.

Eligible Entrants. All fully paid-up members of the R.S.G.B. resident in the British Isles (G, GC, GD, GI, GM and GW). Multiple operator entries will be accepted provided only one call-sign is used.

Sections. Each contest will comprise two sections:

- Fixed Stations.
- Portable/Mobile Stations.

Contacts may be made on A1, A2, A3, A3a or F3 subject to the limitations of the Amateur (Sound) Licence.

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

Contest Exchanges. RST (RS) reports followed by the band identification letter (A for the 144 Mc/s contest, B for the 420 Mc/s contest and C for the 1250 Mc/s contest) and the contact number and location (e.g., RST559A001 SNE Bridgnorth).

Logs. (a) Must be tabulated in columns headed (in this order): "Date/Time (G.M.T.)," "Call-sign of Station Worked," "My Report on His Signals and Serial Number Sent," "His Report on My Signals and Serial Number Received," "Location of Station Contacted," "Type of Emission," "Points Claimed."

(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 Sunday, September 20, 1959.

Awards. At the discretion of the Council, the European V.H.F. Trophy will be awarded to the overall winner of the National 144 Mc/s Open Contest and certificates of merit to the winners and runners-up in both sections. Certificates of merit will also be awarded to the winners and runners-up in each section of the National 420 Mc/s Open Contest and the National 1250 Mc/s Open Contest.

Low Power Field Day, 1959

THE rules governing this annual contest are as follows:

Duration: 10.00 G.M.T. to 17.00 G.M.T. on September 20, 1959.

Eligible Entrants: All fully paid-up Corporate members of the R.S.G.B. resident in G, GC, GD, GI, GM and GW. Multiple-operator entries will be accepted provided only one call-sign is used. (See General Rule 7.)

Contacts: May be made on c.w. (A1) only in the 1-8, 3-5 and 7 Mc/s bands. Each transmission must include the letters LFD.

Scoring: Five points may be claimed for each contact with a portable or mobile station, and one point for each contact with a fixed station.

Contest Exchanges: RST reports followed by the contact number starting at 001 and the location, e.g., RST559001 Oxford.

Logs: (a) Must be tabulated in columns headed (in this order): "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," "Band (Mc/s)," "Points Claimed."

(b) The cover sheet must be made out in accordance with R.S.G.B. Contests Rule 5 and must include the weight of the equipment used. The declaration must be signed.

(c) Entries must be postmarked not later than October 5, 1959.

Equipment: The total weight of all the radio and electrical equipment taken to the site must not exceed 20 lb.

Awards: At the discretion of the Council, the Houston Fergus Trophy will be awarded to the winning station and certificates of merit to the runner-up and to the non-transmitting member submitting the best check log in the opinion of the Contests Committee.

The General Rules for R.S.G.B. Contests apply to this contest. Printed log forms and cover sheets are available from Headquarters on request.

R.A.E.N. Notes and News

By E. ARNOLD MATTHEWS (G3FZW)*

AT Birmingham on June 16 Mr. J. Collett (ex-G3BUR) gave a lecture, entitled "Some Thoughts on Emergency Communications," to the Midland Amateur Radio Society. Members of R.A.E.N. formed a good proportion of the audience which heard a sound analysis of R.A.E.N. operational problems by a professional communications engineer. An important point made was that owing to the relative inefficiency of h.f. band mobile aeriels, the use of Top Band, 80 and 40m was a highly inefficient means of communication for R.A.E.N. purposes unless s.s.b. was used. The alternative offered was the use of v.h.f. which would give adequate service ranges for all except the largest scale emergencies likely to be encountered in Great Britain. Service ranges quoted were 25-30 miles for 2m and up to 20 per cent more on 10m. It was suggested that 10m should be given serious consideration because of the somewhat simpler construction and design problems.

A full report of Mr. Collett's lecture appears in the July issue of the M.A.R.S. Newsletter, obtainable from Mr. M. A. Brett, 55 Chestnut Drive, Birmingham 24, price 1/-, post free.

Groups interested in transferring local nets to 2m may find a study of the possibilities of the TR1985/6/7 equipment rewarding. These sets, obtainable in London at around £9 and in the provinces at £4/17/6, could make the basis of a useful mobile set if one is considering R.A.E.N. only usage. As supplied, the receiver is fixed-tuned and locked to the transmitter frequency, and most members would prefer the advantages obtainable from a tunable receiver. To "unlock" the receiver it will be necessary to employ a new front end, and a suitable design was published in a recent BULLETIN†. Such an arrangement is being used by G3FZL. The receiver contains an extremely efficient noise limiter, whilst the transmitter has an output power of about 5 watts. An h.t. generator is built in. Although the power input is 24 volts it should be easy enough to obtain by placing the spare accumulator, which most mobile operators carry these days, in series with that normal to the car. The equipment is also obtainable as a series of units which can be used to build up a compactly stowed rig in several sections.

Radio Procedure

After careful consideration of three suggested forms of procedure, the R.A.E.N. Committee has decided to recommend the adoption of a modified version of the present procedure. Copies of the new procedure will be issued in due course to members through officers, but individual members residing in areas having no officers should apply to the Hon. Secretary, R.A.E.N. Committee, for their copy. It has also been decided to recommend the adoption of the NATO ("Alpha, Bravo") phonetic alphabet.

Use of Maps

Members operating with police forces may find that exercises or operations carried out in co-operation with them will require the use of Ordnance Survey maps. The Committee has decided to recommend that members should obtain, at their own expense, Ordnance Survey maps as required for R.A.E.N. purposes. Such maps should be of the 1 in. to 1 mile scale such as are already used by v.h.f. operators.

R.A.E.N. RALLY 1959

Rules

- The Rally is open to all R.A.E.N. members and will be divided into three groups:
 - Outstations (R.A.E.N. members operating portable or mobile);
 - Fixed stations (R.A.E.N. members operating from home stations);
 - Receiving stations (R.A.E.N. members operating as receiving stations at home or as outstations).
- The Rally will take place on Sunday, September 27, 1959, from 09.00 to 12.00 G.M.T., 14.00 to 17.00 G.M.T. (telephony) and from 18.00 to 21.00 G.M.T. (Morse code A1). Operation will be in the 1-8, 3-5, 28, and 144 Mc/s bands. R.S.G.B. band planning must be observed. Licensed power must not be exceeded.
- Outstation equipment must not be connected in any way to public

* 1 Shortbatts Lane, Lichfield, Staffs.

† "Two Metre Mobile/Portable Transmitter Receiver," February 1958.

mains electricity supply and must be located at least one mile from home, or other normal fixed station site.

4. Scoring—Transmitting Sections.

- Contacts will score points as follows:
 Outstation to outstation—5 points.
 Outstation to fixed station—3 points.
 Outstation to non-R.A.E.N. station—1 point.
 Fixed station to outstation—3 points.
 Fixed station to fixed station—2 points.
 Fixed station to non-R.A.E.N. station—1 point.

Ten scoring contacts only will be allowed with non-R.A.E.N. stations during the rally.

No station may be worked more than once on each band by the same mode of sending. (G3XXX, G3XXX/P and G3XXX/M count as one station for scoring purposes.)

The best two periods' scores will be counted for placing.

5. Each participant will, on application to his A.C. (or the Honorary Secretary, R.A.E.N. Committee in cases where participants have no A.C.) be issued with a test phrase. This test phrase will be passed to the first R.A.E.N. station contacted, in exchange for the test phrase from that station. The test phrase received will be passed to the next R.A.E.N. station contacted, in exchange again, and so on. No test phrase will be passed to non-R.A.E.N. stations. A.C.s should make application for block issues of test phrases to the Honorary Secretary, R.A.E.N. Committee, by not later than September 19, 1959.

6. Stations will call "CQ from Raynet station..." and sign "from Raynet station..." The letters or word RAEN is forbidden.

7. Printed log sheets will be issued at the same time as the test phrases, by the Honorary Secretary, R.A.E.N. Committee, to all participants through A.C.s in cases where there is an A.C.

Completed entries for all the periods worked must be returned to the Honorary Secretary, R.A.E.N. Committee, 1 Shortbatts Lane, Lichfield, Staffs., postmarked not later than Monday, October 12, 1959. Location and signal reports must be given, received and logged.

Participants should complete, on the top sheet of their log, the details of their station, in the appropriate spaces provided. The declaration must be signed.

8. Receiving Stations—Scoring and Logs.

Receiving stations will score three points per R.A.E.N. station heard in contact, provided that the details required by the printed log sheet are correctly recorded therein.

Receiving stations operating portable or mobile will receive a bonus of one point per R.A.E.N. station correctly logged.

Logs must be submitted on printed sheets obtained from the Honorary Secretary, R.A.E.N. Committee through A.C.s or direct where participants have no A.C. The details and declaration required should be completed and signed on the top sheet only.

Entries should be posted to reach the Honorary Secretary, R.A.E.N. Committee and should be postmarked not later than Monday, October 12, 1959.

9. Awards will be made to the participants who score the highest number of points in each of the groups: Outstations, Fixed Stations and Receiving Stations.

G3FAU/P in Rutland

STEVENAGE Group will be operating G3FAU/P from Rutland during the weekend September 19-20, 1959.

Region 1 Field Day

THE Annual Region 1 Field Day will take place on September 13, between the hours of 10 a.m. and 6 p.m. when portable stations in Region 1 will be looking for contacts with portable stations in other parts of the country.

3.5 Mc/s Activity Contest

THE Tops C.W. Club is holding a 3.5 Mc/s c.w. only contest from 12.00 G.M.T. on September 12 to 12.00 G.M.T. on September 13 and between the same hours on October 10-11, 1959. It is expected that a number of club members in JA, PY, ZD7, VU, VS6, ST2, ZC5, 5A3, 4X4, VK and Z1 will be taking part. Entries must reach J. Browne (G4XC), 245 Yarborough Road, Grimsby, not later than November 30, 1959.

A copy of the rules may be obtained from the Hon. Secretary, J. P. Evans (GW8WJ), 2 Ffordd Ty Newydd, Meliden, Prestatyn, North Wales.

PUBLICITY POSTER

Members with a flair for poster design are invited to submit sketches for a new Double Crown Society poster. The design should focus attention on the main advantages of membership and should incorporate the badge and the address of the Society.

The accepted design will be printed in two or three colours.

Regional and Club News

Amateur Radio Club of Nottingham.—Recent activities have included a visit to the new Nottingham Telephone Exchange and operating a portable station at a Scout garden party. Meetings are held on Tuesdays and Thursdays at Woodthorpe House, Mansfield Road, Nottingham, commencing at 7.15 p.m. *Hon. Secretary:* E. C. Weatherall, 16 Avebury Close, Clifton, Nottingham.

Barnsley and District Amateur Radio Club.—The next meeting will be the A.G.M. on September 11 at the King George Hotel, Peel Street, commencing at 7.30 p.m.

Blackburn Amateur Radio Club.—This new club meets on Fridays at 8 p.m. at 14 Old Bank Lane, Whinney Heights, Blackburn. Prospective members are invited to attend or to contact Frank Bird, G3GZE (Tel. No.: Blakewater 42004) for further details.

Bradford Amateur Radio Society.—The new session begins on September 8 when J. Davison (G3JKD) of Mains Radio Gramophones Ltd. will give a talk on television tuners and printed circuits at Cambridge House, Little Horton Lane, Bradford 5, commencing at 7.30 p.m. At the A.G.M. the following were elected: *President*—D. G. Enoch (G3KLZ), *Vice-President*—D. Binns (G3MGI), *Hon. Secretary*—D. M. Pratt (G3KEP), *Hon. Treasurer*—F. J. Davies (G3KSS) and *Public Relations Officer*—D. Noble (G3MAW).

Bristol.—There was an attendance of about 50 at the June meeting which featured descriptions of equipment built by local members. The Group's N.F.D. activities were shown by B.B.C.-TV in *View of the West* on June 18. Details of meetings to the end of 1959 may be obtained from the *Hon. Secretary:* D. F. Davies (G3RQ), 51 Theresa Avenue, Bishopston, Bristol 7.

Clifton Amateur Radio Society.—Meetings are held on Fridays at 225 New Cross Road, London, S.E.14, at 8 p.m. while the clubroom is open most Sunday mornings from 11.30 a.m. when G3GHN is on the air. A visit was paid recently to the B.B.C. Monitoring Station at Tatsfield.

Crystal Palace and District Radio Club.—Meetings are now held on the second Saturday and last Tuesday in each month at 8 p.m. in Windemere House, Westow Street, Crystal Palace. *Hon. Secretary:* G. M. C. Stone (G3FZL), 10 Liphook Crescent, Forest Hill, London, S.E.23.

Grafton Radio Society.—The society's field day on June 13-14 was again very successful, G3AFT/P being operated on the h.f. bands and G2CJN/P on Top Band, 80 and 40m. Meetings at Montem School, Hornsey Road, N.7, re-commence on September 4. *Hon. Secretary:* A. W. H. Wennell (G2CJN), 145 Uxendon Hill, Wembley Park, Middlesex.

Lothians Radio Society.—The next meeting will be on September 10 at 7.30 p.m. at the new venue, the Y.M.C.A., St. Andrew Street, Edinburgh. The society will thereafter meet fortnightly on the second and fourth Thursday of each month. At the A.G.M., GM3BDA was elected *President*, with GM3LAV, GM3FJP and V. Stewart (A.1394) on the Committee. The *Hon. Secretary* is L. Lumsden (B.R.S. 22359), 33 Hillview Drive, Edinburgh 12.

Mitcham and District Radio Society.—Meetings are held on Fridays at "The Cannons," Madeira Road, Mitcham, at 8 p.m. Morse and theory classes alternate with formal meetings. Lectures on radio theory will start again in September.

Newbury and District Amateur Radio Society.—A Junk Sale is arranged for August 28 at Elliotts of Newbury Canteen, West Street, Newbury. The Annual Hamfest will take place on October 11. *Hon. Secretary:* J. A. Gale (G3LLK), "Wild Hedges," Crookham Common, near Newbury.

Preston Amateur Radio Society.—Meetings are now held on Wednesdays at the new club room, 145 Hammond Street, Preston, commencing at 7.30 p.m. The future programme covers theory and practical work and visits to places of interest. Prospective members are invited to attend any meeting or to contact the *Hon. Secretary:* G. Lancfield (G3DWQ), 35 Brixton Road, Frenchwood, Preston.

Purley and District Radio Club.—Recent activities have included participation in the Summer Fair where G3JSQ/A was in operation. Details of future meetings may be obtained from the *Hon. Secretary:* E. R. Honeywood (G3GKF), 105 Whytecliffe Road, Purley, Surrey.

Reigate Amateur Transmitting Society.—A highly successful demonstration of Amateur Radio was given at the Nutfield

Church Fete in June. The society will be taking part in the European V.H.F. Contest on September 5-6. Morse and theory instruction is being arranged for members wishing to obtain licences. Prospective members may obtain further information from the *Hon. Secretary:* F. D. Thom (G3NKT), 12 Willow Road, Redhill.

Tees-side Amateur Radio Club.—No meetings are being held during August but details of future meetings at the Settlement, Newport Road, Middlesbrough, may be obtained from the *Hon. Secretary:* A. L. Taylor (G3JMO), 12 Endsleigh Drive, Acklam, Middlesbrough.

Torbay Amateur Radio Society.—Derrick Webber (G3LHJ) gave details of a new contest for shortwave listeners at the July meeting, attended by 30 members. Morse classes are held on Friday evenings at the Headquarters, 94 Belgrave Road, Torquay. Monthly meetings are held at the Y.M.C.A., Torquay. Visitors to the area are invited to attend meetings and to visit the Headquarters on Tuesdays or Fridays. *Hon. Secretary:* George A. Western (G3LFL), 118 Salisbury Avenue, Barton, Torquay.

Worthing and District Amateur Radio Club.—About 200 amateurs attended the club's annual "Bucket and Spade" Party on June 28. The A.G.M. is arranged for September 14. Meetings are held on alternate Thursdays at Beach House, Brighton Road, Worthing, the next being on August 20 and September 3.

Representation

THE following is an alteration to the list of Regional Representatives published in the December 1957 issue:

REGION 9

R. E. Griffin (G5UH), 13 Alexandra Road, Uplands, Bristol 3.

Vacancies

Mr. J. D. Kay (G3AAE) has resigned as District Representative for London North and Mr. W. Farrar (G3ESP) as Area Representative for Pontefract and Castleford. Nominations for their successors should be made in the prescribed form and sent to reach the General Secretary, New Ruskin House, Little Russell Street, London, W.C.1, by not later than September 30, 1959.

Affiliated Societies' Representatives

THE following have been elected as Affiliated Societies' Representatives for the current year:

BOURNVILLE RADIO SOCIETY (G6BV): R. W. Kidner (G6K1), 160 Franklin Road, Bournville, Birmingham.

FLINTSHIRE RADIO SOCIETY: William Davies (B.R.S. 20284), The Flat, Bradford Buildings, Fern Avenue, Prestatyn, Flintshire.

Edinburgh Radio Careers Exhibition

A RADIO Careers Exhibition was held in George Watson's Boys' College, Edinburgh on May 23, 1959 and was organized by Tom Simpson (GM3BCD) and John Hughes (GM3LCP), the leaders of the school radio club. Practical demonstrations were given by the Post Office, the B.B.C., the Edinburgh City Police, local radio firms and by Club members.

The Club station (GM3BCD) had been allocated the call GB3GWC for the afternoon and attracted an interested audience. With GM3EWL and GM3UM at the microphone, the station was in constant operation during the exhibition making many contacts on 7 and 21 Mc/s despite a high noise level and rather poor conditions.

The equipment used on 7 Mc/s was a Panda Cub lent by GM3BQA, feeding a dipole, while on 21 Mc/s the Club's 813 transmitter fed a cubical quad. CR100 receivers were used for both bands.

Friern Barnet and Wood Green Shows

SOUTHGATE, Finchley and District Group will be operating GB3SRA from the Friern Barnet Summer Show at Friary Park, N.11, on August 21-22 and from the Wood Green Show at the Town Hall Park, London, N.22, on September 4-5.

GB3SRA will be active on all bands from 1.8 to 28 Mc/s. Contacts will be appreciated.

Coronation Trophy 1959

ILFORD Group were the winners of this year's competition for the Coronation Trophy, with a score of 182 points. Ilford's participating stations were G3HIW, G3IRL and G3LVP. The runner-up was East Ham with 174 points.

East Ham Group congratulates the winners and hopes that more East London groups will take part in 1960.

Forthcoming Events

Details for inclusion in this feature must reach the appropriate Regional Representatives not later than the 18th of the month preceding publication. T.R.s and club secretaries are reminded that the information submitted must include the date, time and venue of the meeting and, whenever possible, details of the lecture or other event being arranged. Regional Representatives are requested to set out copy in the style used below.

REGION 1

- Blackpool (B. & F.A.R.S.).**—Tuesdays, 8 p.m., Squires Gate Holiday Camp.
Bury (B.R.S.).—September 8 ("Automobile Association Radio Communications," by P. J. Doran of the A.A.). The George Hotel, Kay Gardens.
Crosby (C.A.R.S.).—Tuesdays, 8.30 p.m., "Colonsay," Crosby Road South, Waterloo, Liverpool 22.
Liverpool (L. & D.A.R.S.).—Tuesdays, 8 p.m., Gladstone Mission Hall, Queens Drive, Stoneycroft.
Macclesfield (M. & D.R.S.).—August 25, September 8, 22, "The Bruce Arms," Crompton Road.
Manchester (M. & D.R.S.).—September 14, 7.30 p.m., The Wellington Hotel, Nicholas Croft, High Street, off Market Street.
Manchester (S.M.R.C.).—Fridays, 7.30 p.m., Ladybarn House, 17 Mauldeth Road, Fallowfield.
Preston (P.A.R.S.).—Wednesdays, 7.30 p.m., 145 Hammond Street.
Stockport (S.R.S.).—August 26, September 9, 23, 8 p.m., The Blossoms Hotel, Buxton Road.
Wirral (W.A.R.S.).—August 21, September 4, 18, 4 Hamilton Square, Birkenhead.

REGION 2

- Barnsley (B. & D.A.R.C.).**—September 11 (A.G.M.), 7.30 p.m., King George Hotel, Peel Street.
Bradford (B.A.R.S.).—September 8, 7.30 p.m., Cambridge House, 66 Little Horton Lane.
Halifax (H. & D.A.R.S.).—September 1 (A.G.M.), Sportsman Inn, Ogden.
Scarborough (S.A.R.S.).—Thursdays, 7.30 p.m., Chapman's Yard, North Street.

REGION 3

- Birmingham (Slade).**—August 28 ("B.B.C. F.M./TV" by G3BA), 7.45 p.m., The Church House, High Street, Erdington.

- Coventry.**—August 28 ("Radio Theory" by J. Boyce), 7.30 p.m., Vine Street Schools.
Stourbridge and District (St. A.R.S.).—August 28, 8 p.m., "White Horse," Ambleside; September 1, 8 p.m., Brotherhood Hall, Scotts Road, Stourbridge.
Sutton Coldfield.—September 27, 2 p.m. Meeting of Midland radio societies at Sutton Park, organized by Sutton Coldfield Amateur Radio Society.

REGION 6

- Cheltenham.**—First Thursday in each month, 8 p.m., Great Western Hotel, Clarence Street.

LONDON MEMBERS' LUNCHEON CLUB

will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, at 12.30 p.m. on Fridays, August 21, September 18 and October 16, 1959. Telephone table reservations to HOL 7373 prior to day of luncheon. Visiting amateurs especially welcome.

REGION 7

- Acton, Brentford and Chiswick.**—September 15, 7.30 p.m., A.E.U. Rooms, 66 High Road, Chiswick.
Barnet (B. & D.R.C.).—August 25, (Junk Sale), September 29 (A.G.M.), 7.30 p.m., Red Lion Hotel, High Barnet.
Bexleyheath (N.K.R.S.).—September 10, 8 p.m., Congregational Hall, Clock Tower, Bexleyheath.
Croydon (S.R.C.C.).—September 8, 7.30 p.m., "Blacksmith's Arms," South End, Croydon.
Ealing.—Sundays, 11 a.m., ABC Restaurant, Ealing Broadway, London W.5.
East Molesey (T.V.A.R.T.S.).—September 2 (Talk by G. A. Bird, G4ZU), Carnarvon Castle Hotel, Hampton Court.
Enfield and District.—September 20, 3 p.m., George Spicer School, Southbury Road, Enfield.
Harlow and District.—Thursdays, 7.30 p.m., rear of G3ERN (G. E. Read), High Street, Harlow.
Holloway (G.R.S.).—September 4, 7 p.m., Montem School, Hornsey Road, London N.7.
Ilford.—Thursdays, 8 p.m., G2BRH, 579 High Road, Ilford.
Kingston.—Lectures alternate Thursdays, Theory and Morse classes weekly, 7.45 p.m., Y.M.C.A., Eden Street, Kingston-on-Thames.
New Cross (C.A.R.S.).—Fridays, 7.30 p.m., 225 New Cross Road, London, S.E.13.

DATES FOR YOUR DIARY

- August 16.**—Derby Mobile Rally.
August 16.—South Shields Mobile Rally.
August 23.—Tunbridge Wells Mobile Rally.
August 26-September 5.—National Radio Show, London.
August 30.—G6UT's Ham Party.
August 30.—South Manchester and Stockport Mobile Rally.
September 6.—London Mobile Rally.
September 12.—Glasgow O.R.M.
September 13.—Ayr O.R.M.
September 13.—National Mobile Rally at Woburn Abbey.
September 20.—Lincoln Hamfest and Mobile Rally.
September 20.—Southampton O.R.M.
September 26.—Cardiff O.R.M.
September 27.—Meeting of Midland radio societies at Sutton Park, Sutton Coldfield.
November 25-28.—R.S.G.B. Radio Hobbies Exhibition, London.

- Romford (R. & D.A.R.S.).**—Tuesdays, 8.15 p.m., R.A.F.A. House, 18 Carlton Road, Romford.
Slough.—September 7, 8 p.m., Stag Hotel, Wexham Street, Wexham.

REGION 9

- Bristol.**—August 21 ("Modern Teleprinter Communications," H. J. Gratton, G6GN), September 18 ("Atoms and the Amateur," D. H. Collins, B.R.S.19638, and G. E. Thompson, B.R.S.20190), 7.15 p.m., Carwardine's Restaurant, Baldwin Street, Bristol.

REGION 10

- Penarth.**—August 31 ("Questions and Answers," Les Hancock, GW2XZ), September 28 (Members' Equipment Display), Y.M.C.A., Penarth.

REGION 11

- Prestatyn (F.R.S.).**—September 7 ("Interference Suppression," T. Makinson), 7.30 p.m., Railway Hotel.

REGION 14

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

REGION 17

- Southampton.**—September 5, 7 p.m., Prospect House (back of Gas Showrooms), Above Bar.

SCOTTISH REGIONAL MEETINGS

Glasgow

West Room, The Christian Institute,
70 Bothwell Street, C.I.

Saturday, September 12, 1959

Programme:

- Assemble** 2 p.m.
Business Meeting 2.30 p.m.
Tea will be served during the afternoon
Dinner and Entertainment at the Ivy Restaurant, 111 St. Vincent Street, Glasgow, C.I. 6.30 p.m.

Tickets, price 15/- each, may be obtained from D. Ross Macadie (GM6MD), 154 Kingsacre Road, Glasgow, S.4, or from T. Hughes (GM3EDZ), 53 Ancroft Street, Glasgow, N.W.

The Council will be represented at both meetings by Messrs. D. A. Findlay, D.F.C., G3BZG (Penultimate Past President), E. G. Ingram, GM6IZ (Zonal Representative) and J. D. Kay, G3AAE (Member of Council). Visitors arriving in the district early and wishing hospitality from local members are asked to mention this when applying for tickets.

South West Scotland

Towans Hotel, Prestwick
(near Airport)

Sunday, September 13, 1959

Programme:

- Assemble** 2 p.m.
Business Meeting 2.30 p.m.
Informal Tea 4.15 p.m.
J-Beams by GM3BQA 5 p.m.
Dinner 6.30 p.m.
Entertainment 8 p.m.

A tour of the Burns Country for the ladies will leave the hotel at 2.30 p.m.

Tickets, price 21/- each, may be obtained from D. Tannock (GM2BUD), 45 Sunnyside Crescent, Mauchline, Ayrshire. The last day for application is September 5, 1959.

Book Review

THE RADIO AMATEUR'S HANDBOOK. (36th Edition): by the Headquarters staff of the A.R.R.L. 631 pages with numerous illustrations and tables. Price 34/- from R.S.G.B. Bookshop.

The latest edition, like all its predecessors, shows many changes and improvements. Up-to-date designs take the place of yesterday's best, and the development of newer techniques is recorded. The older amateur will notice with regret the increasing neglect of receiver construction today; the present edition shows no receiver, other than a single valve regenerative, which is designed to receive 14 Mc/s. But there are "two-band" receivers, and converters, and a very selective i.f. amplifier. A new two-band 25 watt v.f.o. transmitter of the transportable type is shown, but there is a gap between the 90 watt and the 500 watt transmitter designs: this will, of course, be most noticeable by the U.K. amateurs, though others must need an intermediate type. The 807, of great worth, is absent from the high-frequency transmitter pages for the first time in many years, but a pair of 6L6GB valves in a four-band 75 watt transmitter have a familiar look. A v.f.o. design with differential keying of oscillator and amplifier is noteworthy, and uses the Vackar oscillator.

The "cubical quad" aerial is now described, and mobile techniques have some new treatment. There have been many additions and alterations, and this new addition is a very worthy successor in the long line of invaluable and beautifully produced Handbooks.

T. P. A.

Can You Help?

● S. A. Bowen (G3GCO), 31 The Crescent, Donnington, Wellington, Salop, who requires a copy of the July 1953 issue of the R.S.G.B. BULLETIN containing details of "The Elizabethan" transmitter?

● G. G. Carter (B.R.S. 3015), Ivy Cottage, Fittleworth, Pulborough, Sussex, who wishes to borrow the January and February 1959 issues of QST?

● T. Corcoran (A.1572), 24A Showell Green Lane, Birmingham 11, who requires a copy of the now obsolete Mullard publication *High Quality Sound Reproduction* or any other information on the Mullard f.m. tuner?

● A. Parker (G3KH), 133 Station Road, Cropston, Leicester, who wishes to obtain the circuit diagram and any other information on the Receiver Unit 114 Ref. 10P/17667 (part of the TR.1986)?

Radio Amateurs in the Royal Navy

MR. M. R. DAVIES (GW3ITD), c/o Rhoslyn, Llanybyther, Carmarthenshire, is compiling a list of licensed amateurs serving in the Royal Navy and will be pleased to hear from members in the Service.

Midland Societies Meeting

SUTTON Coldfield Amateur Radio Society is arranging a meeting of Midland radio societies at Sutton Park, Warwickshire, on September 27. A talk-in station will be in operation on 1925 kc/s.

KW Electronics Ltd.

KW ELECTRONICS Ltd. has moved to new premises at Vanguard Works, 1 Heath Street, Dartford, Kent (Telephone: Dartford 5574).

Slow Morse Practice Transmissions

B.S.T.	Call-sign	kc/s	Town
Sundays			
09.00	G3BHS	1810	Southampton
11.00	G3GZE	1840	Blackburn
11.00	G2FXA	1900	Stockton-on-Tees
12.00	G3LP	1850	Cheltenham
12.00	G15UR	1860	Belfast
15.00	G3LEQ	1900	Tunbridge Wells
20.00	G3MRA	1915	Southampton
20.30	G3HTA	1850	Exeter
21.00	G2FIX	1812	near Salisbury
Mondays			
18.00	G3GZE	1840	Blackburn
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	1975	Woking
20.00	G3IAF	1915	Southampton
20.30	G3NEU	1875	Felixstowe
20.30	G3AGN	1910	Derby
20.30	G3LCK	1935	Barnet
21.00	G3LXP	1980	Ilkeston, Derbys.
21.30	G3LCK	1980	West Hallam, Derbys.
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	G3BHS	1915	Southampton
20.00	G3NHR	1900	Hounslow
20.15	G2AYQ	1875	St. Agnes, Cornwall
21.00	G3EFA	1855	Southport
21.15	G2CPL	1875	Felixstowe
21.45	G2UK	1875	Lowestoft
Wednesdays			
18.00	G3GZE	1840	Blackburn
19.00	G3EJF	1820	Bury, Lancs.
19.00	G3MCI	1845	Exeter
19.00	G3FLK	1830	Heanor, Derby
19.00	G3LZC	1850	Chesterfield
19.00	G3LBI	1915	Southampton

B.S.T.	Call-sign	kc/s	Town
Wednesdays			
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3MXI	1910	Derby
21.00	G3BHS	1810	Southampton
21.00	G3AGX	1920	Hull
22.00	G3LCK	1980	Ilkeston, Derbys.
22.00	G3MXI	1980	West Hallam, Derbys.
Thursdays			
17.30	G2AAM	1981	Swanwick, Derbys.
18.30	G3NC	1825	Swindon
20.00	G3NBR	1915	Southampton
20.00	G3NHR	1900	Hounslow
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3GZ	1910	Kingsbury, N.W.9
20.30	G3EWE	1875	Woking
20.00	G3IAF	1915	Southampton
21.00	G3BHS	1810	Southampton
21.30	G3HMY	1850	Exeter
22.00	G3JKY	1990	Beckenham
Fridays			
18.30	G3DMN	1880	Ipswich
19.30	G3FVP	1850	Kilburn, Derby
19.30	G3MHR	1850	Swanwick, Derbys.
20.00	G3JLS	1915	Southampton
20.15	G2AYQ	1875	St. Agnes, Cornwall
20.30	G3ICX	1915	Sutton Coldfield
20.30	G3KGU	1915	Theydon Bois, Essex
21.00	G3BHS	1810	Southampton
21.00	G3KLZ	1900	Bradford
22.00	G3KSS	1859	Bournemouth
22.00	G3KYU	1980	Ilkeston, Derbys.
22.00	G3LCK	1980	West Hallam, Derbys.
Saturdays			
09.00	G3MRA	1915	Southampton
13.00	G2FXA	1900	Stockton-on-Tees
20.00	G3MCL	1915	Southampton

† Alternately.

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Three-channel crystal control receiver working on 332.6; 333.8 and 335 Mc/s. Includes 28D7; 2-12SN7; 7-6AJ5; 12SR7. Relay's, etc. Input 24 to 28 volts D.C. Only 59/6, p.p. 5/-.

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Type 25. Switched tuning 30 to 40 Mc/s. Includes: 3-SP61, etc., 10/-, carriage 2/6. Circuit 9d.
Type 26. Variable slow motion tuning 50 to 65 Mc/s. Includes: 2-EF54 and EC52, 25/-, carriage 2/6. Circuit 9d.

1933 RECEIVER CONTROL UNIT

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- * 4-Channel Crystal Controlled
- * 100 to 120 Mc/s Coverage
- Unit complete with 21 valves; crystal; 24 volt rotary power unit, etc., in metal case. In new condition with full circuit diagram. Carriage 10/6.
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- * 40 kc/s Bandwidth
- Circuits separately, 1/9 post free.

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- RECEIVER ... 114
- IF Amplifier ... 476
- Modulator ... 105
- 24 v. Rotary unit ... 3
- 10-way Control unit ... 382
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- 25/-
- 32/6
- 20/-
- 15/-
- 6/-
- Less valves
- 25/-
- 7/6
- 12/6
-
-
-
- P.P.
- 2/6
- 2/6
- 2/6
- 2/6
- 2/6
- 9d.

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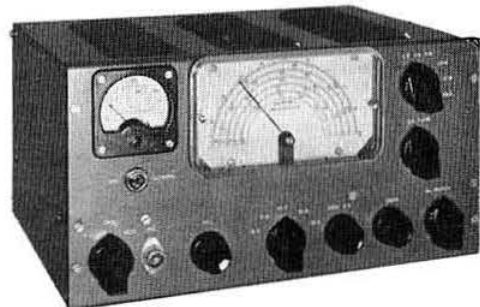
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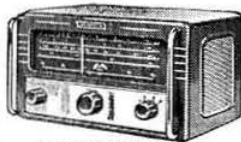
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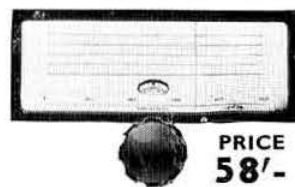
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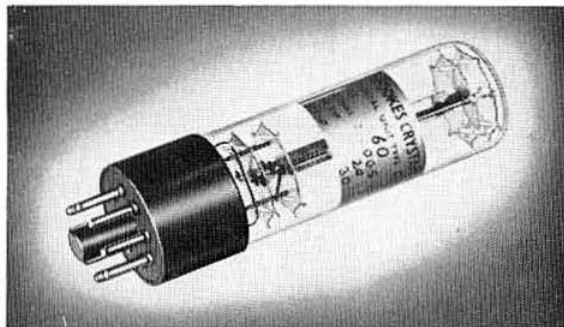
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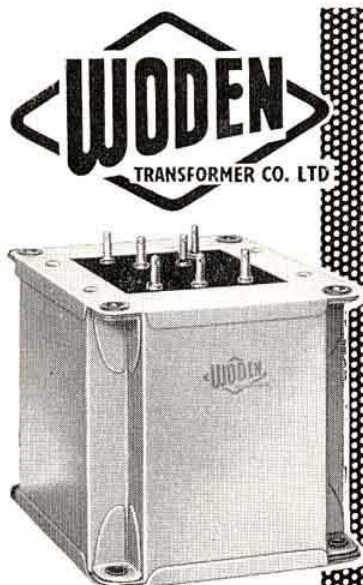
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Return to:—
R.S.G.B., NEW RUSKIN HOUSE,
LITTLE RUSSELL STREET, W.C.1

IF UNDELIVERED

Return to:—
R.S.G.B., NEW RUSKIN HOUSE,
LITTLE RUSSELL STREET, W.C.1