

R S G B

OCTOBER, 1958

BULLETIN

2/6 Monthly

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

VOL. 34, NO. 4

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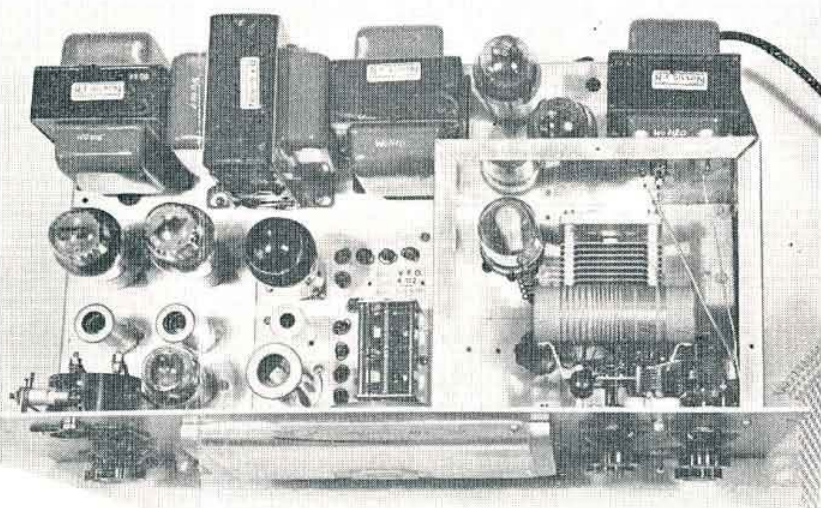
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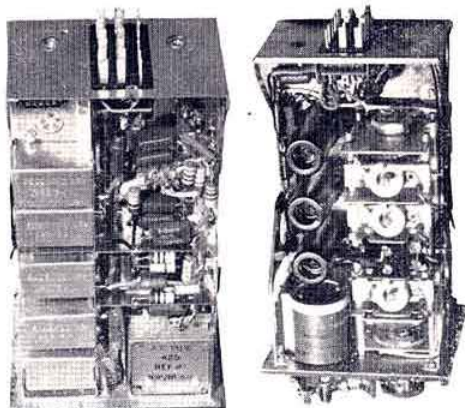
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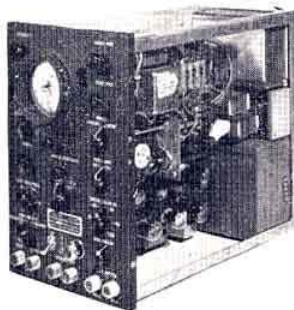
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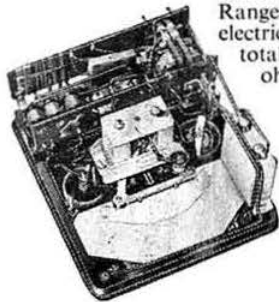
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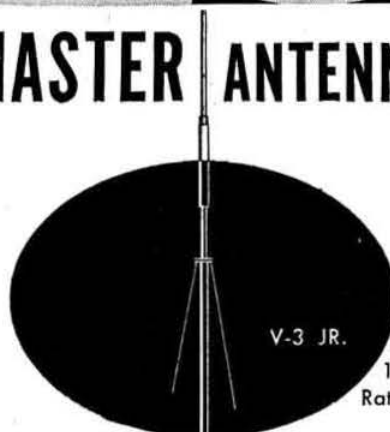
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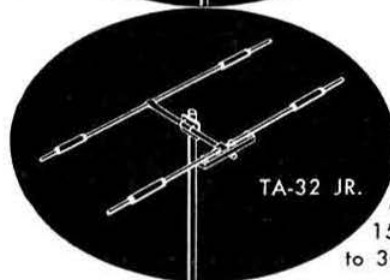
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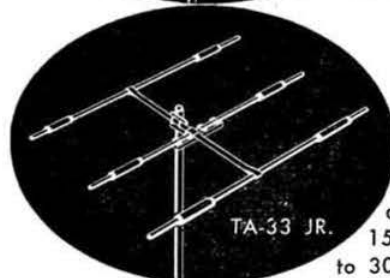
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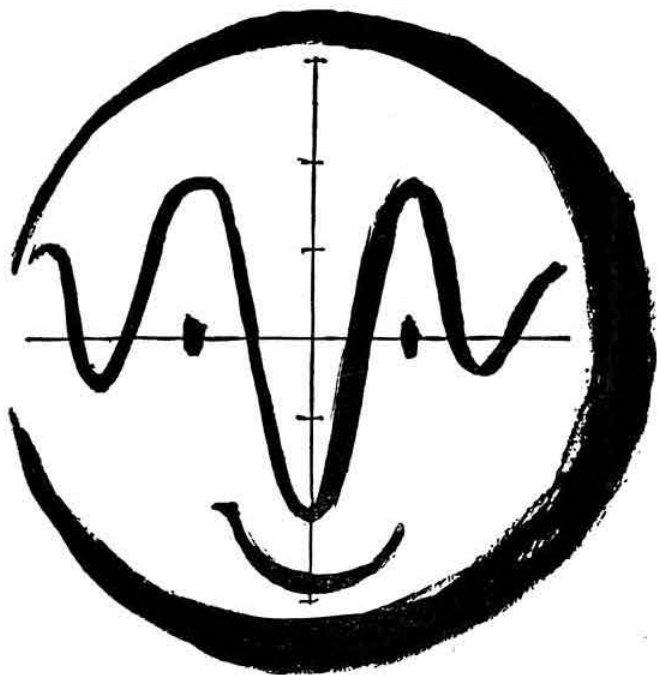
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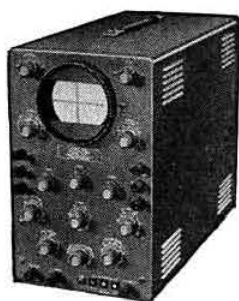


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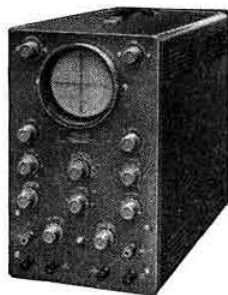


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Volume 34 No. 4

October 1958

R.S.G.B. BULLETIN

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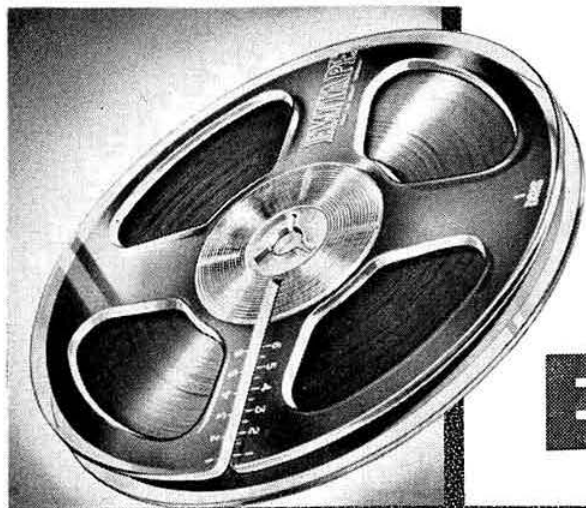
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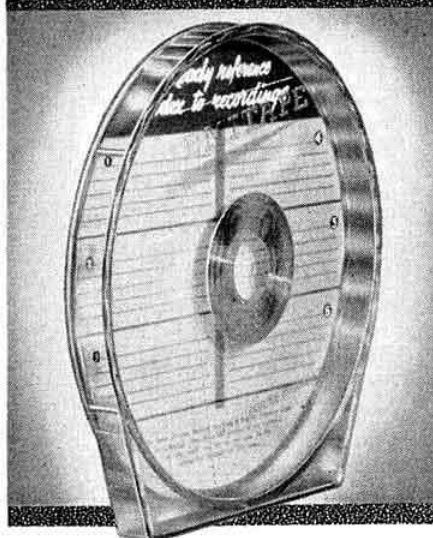
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Current Comment

discusses topics of the day



Telling the World

AT the recent Bad Godesberg Conference a useful discussion took place on a paper submitted by the Finnish Society (S.R.A.L.) on the general question of publicity for the Amateur Radio movement. Introducing his paper, the author, Osmo A. Wiio (OH2TK), commented that the remedy for misunderstanding is better public relations activity. "Our future existence," he said, "as well as the future of the ham bands depend very much on the attitude of the public towards ham radio." How right he was, for in our modern society public opinion is so powerful that very few organisations can afford to be without its support.

Amplifying his theme Mr. Wiio referred to the valuable publicity which came to the Amateur Radio movement as the result of the French film *Race for Life*, and of the propaganda value of articles in the local and national press.

After discussing the paper, the Conference unanimously resolved to recommend each National Society to appoint a Public Relations Officer who would be responsible for seeing that no opportunity is lost of obtaining publicity for the Amateur Radio movement.

The R.S.G.B., in common with other Societies with a permanent staff, is frequently able to pass on items of hot news to the national press, but there must be many other matters of interest to the public which are never reported to Headquarters.

Next month another Radio Hobbies Exhibition will be held in London. Last year many thousands of non-members of the R.S.G.B. visited the Exhibition attracted there by the publicity which it had received in advance from the press. This year the numbers could easily be doubled if every member living within 25 miles of Central London made a point of inviting at least one non-member of the R.S.G.B. to visit the Exhibition as his guest. Undoubtedly the best publicity accrues when the interested non-member can see an Amateur Radio station in operation, be it at an exhibition, at a local club or in a private house.

When commenting last month on the Radio Amateurs' Examination, we referred to the importance which the G.P.O. now places on licensing conditions and on interference. The value of every course of instruction for the R.A.E. would be enhanced if it were possible for an Amateur Radio station to be installed and operated from the instruction centre. The publicity value of such a station, as Mr. G. M. R. Garratt (G5CS) and his colleagues at the Science

Museum in London, know only too well, is very considerable. Incidentally, why not make a point when you next have a spare afternoon in London of paying a visit to the Science Museum? The Amateur Radio station there is the best publicity agent the movement possesses at the moment, thanks to the foresight of Mr. Garratt and his friends who keep the station active, day in, day out.

Headquarters is anxious to extend its relationships with the public, but it can only do so effectively if the staff are kept fully informed of what is going on.

May we suggest that the next time you "hit the headlines" with some outstanding achievement or obtain knowledge of a job well done by an amateur you pass on the news to Headquarters promptly?

With the next World Radio Conference less than a year away it behoves us all to keep the Amateur Radio movement well before the public eye.

Significant Figures

ONCE a year International Amateur Radio Union Headquarters invite all Member Societies—there are now more than 50 of them—to furnish statistical information on a variety of subjects.

Last December, when the 1957 return was made, the 33 Member Societies who responded turned in figures which showed that at that time there were 237,500 licensed amateur stations in those 33 countries. Allowing for the Societies that made no return, plus the few that are not members of I.A.R.U., the world total could not have been far short of 250,000—it may even be greater than that by now.

With the next World Radio Conference looming ahead these are significant figures, because they show that the Amateur Service is greater, numerically, than all other Services put together.

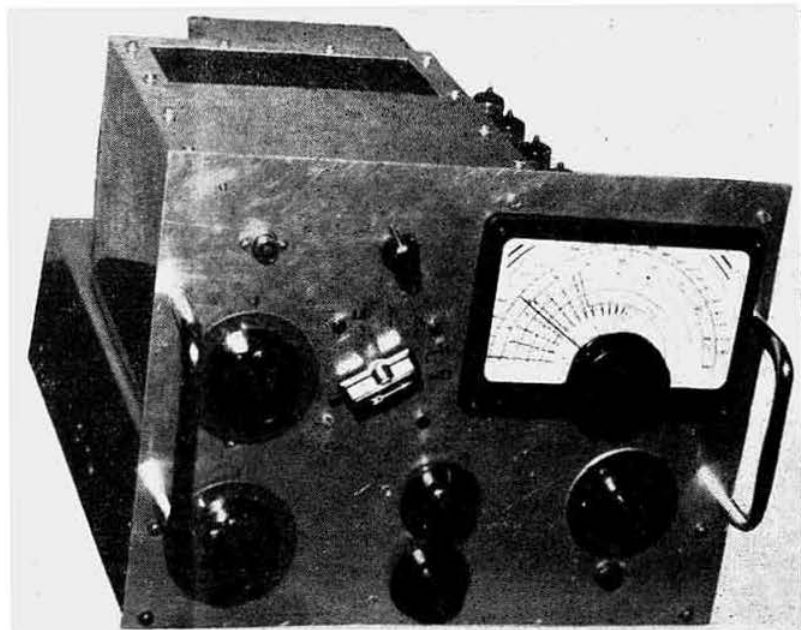
The U.S.A. figure was given as 182,000 but as only 70,000 of them were, at that time, members of A.R.R.L. it is probable that less than half of the 182,000 were active. Even so, nearly 100,000 active stations in one country is a figure to ponder over. In Region I (Europe, Africa and parts of Asia) there were about 27,000 amateur stations at the time the questionnaire was completed.

Incidentally the I.A.R.U. questionnaire has disclosed that the annual subscription paid by home Corporate members of the R.S.G.B. (30s. or \$4.25) is lower than that paid by members of 11 of the other 20 Member Societies in Region I.

Significant figures, whichever way they are looked at.
—J.C.

The DX Five An All Band 150 Watt Transmitter Using an 813

By G. F. GEARING (G3JJG)*



A front view of the transmitter showing the panel arrangement

AFTER much time spent exclusively on Top Band at G3JJG interest in working DX was aroused and it was decided to build a transmitter to cover the five amateur bands from 3.5 Mc/s to 28 Mc/s. The aim was to radiate a clean signal at the full licensed input of 150 watts at any time of day or night, with no interference to television. The equipment described in this article is the result.

The practice of running two 807s in the final was viewed with some mistrust, as at 150 watts input on c.w. the valves are at their maximum I.C.A.S. ratings, while on phone the input must be reduced. It was therefore decided to use an 813 power amplifier, with 1000 volts on the anode. At 150 watts input on phone or c.w. this valve is of course well within its ratings.

In the final design, the r.f. section of the transmitter was constructed in five fully screened compartments. The circuit is shown in Fig. 1.

The V.F.O. and Buffer

The v.f.o. employs the Clapp circuit and covers 3500 kc/s to 3800 kc/s on the sweep of the 75pF variable condenser C2. C1, a 200pF silver mica, and C3, a 60pF pre-set air-spaced variable, pad C2 to give the required L/C ratio. C3 is adjusted initially to the low frequency band edge. C2 and C3 are Eddystone microcondensers and have proved very stable with no trace of microphony. C4 and C5 provide the cathode capacity tap and must be high quality silver mica components.

The EF80 oscillator (V1) is fed from a stabilized h.t. supply of 250 volts. A VR150/30 and a VR105/30 in series may be used (or alternatively an OA2 (150 volt) and OB2 (105 volt) which have B7G bases). The cathode is taken to earth via an r.f. choke. Keying has not been tried on the v.f.o. but if required, this r.f. choke may be lifted from earth and the key inserted.

R.f. output is taken from the v.f.o. anode through C9 (12pF). Although this value may seem rather low, a 100pF condenser gives no greater drive but increases the chances

of slight chirp caused by the varying reflected load when keying the buffer.

The anode of the buffer is fed from the main h.t. rail at 300 volts. Should insufficient drive be obtained from this section, a wideband tuned circuit may be inserted in the buffer anode.

Multiplier Stages

Output from the anode of the buffer, through C13, is taken through a short length of coaxial cable into the multiplier section. It was found best to completely wire this section with l.t., h.t., screen supplies, keying and r.f. leads floating, and to complete these connections after the sub-chassis was mounted on the main chassis. P.a. grid drive is varied by R4 which alters the screen supply to V3 (3.5 Mc/s).

The four 5763s (V3, 4, 5, 6) are spaced equally along the chassis with C18, C23 and C28 mounted between them. The screwdriver slots are adjustable from above. These pre-set condensers balance out the capacity changes as each doubler is switched into circuit, and are initially adjusted for greatest drive, then sealed.

The grid and cathode resistors of the 5763s have been selected by experiment to give as much drive as possible and seem to be optimum. All resistors in the cathode circuits are of 1 watt rating. R14, 17 and 20 are connected by the yellow, pink and orange wires respectively to a switch wafer in the multiplier unit. When a 5763 is not in circuit it has a high resistance in its cathode, so reducing the anode current to a safe value.

All decoupling capacitors are disc ceramic types which are very effective at TV frequencies and help keep down unwanted harmonic generation.

Keying is effected in the cathode of V3. L2 and C16, which are located in the v.f.o./b.a. compartment, give clean but sharp signals on all bands.

R.f. output from the multiplier unit to the sub-chassis is by the mauve wire which is replaced by a short length of co-ax and taken through a hole drilled in the detachable side of the coupler and so to C33. The shorter this lead and the lead on the other side of C33, the better.

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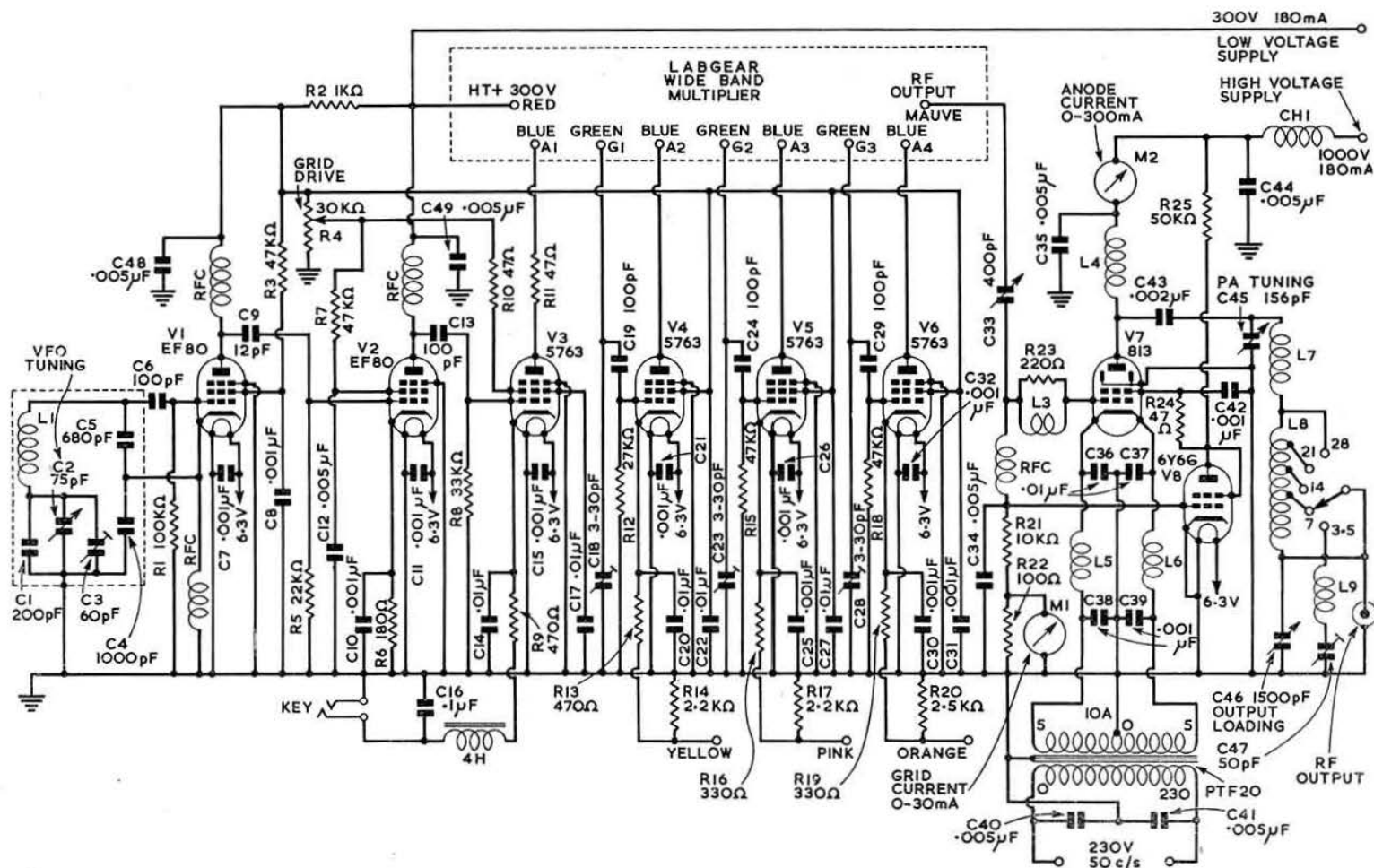


Fig. 1. Circuit diagram of the complete transmitter. L1 (oscillator coil), 32 turns 22 s.w.g. enamelled, close wound on $\frac{3}{8}$ in. diameter former; L2 (part of key click filter), 4 Henrys 22.5 mA choke; L3 (anti-parasitic choke), 6 turns 22 s.w.g. enamelled wound on R3; L4, Labgear pi-network r.f. choke; L5, 6 heater chokes, 26 turns 16 s.w.g. enamelled close wound on $\frac{1}{8}$ in. diameter polystyrene rod; L7 (28 Mc/s p.a. coil), 4 turns 3/16 in. copper tube $1\frac{1}{2}$ in. o.d. spaced 4 turns per inch; L8 (main p.a. coil), 14 turns 12 s.w.g. spaced 12 turns per inch 2 in. o.d. (ex-TUSB), tapped at 7-8 turns for 7 Mc/s, $3\frac{1}{2}$ -4 turns for 14 Mc/s and $1\frac{1}{2}$ turns for 21 Mc/s; L9 (harmonic trap), 6 turns 16 s.w.g. $\frac{1}{8}$ in. diameter $1\frac{1}{2}$ in. long. C47 tunes L9 to the local Band 1 television channel for added harmonic reductions.

P.a. Circuit

C33 (peak drive control), by varying the capacitive coupling to the p.a. grid, permits greatly increased drive to be obtained. It is only necessary to tune this condenser when changing from band to band and it can then be left when shifting frequency within the band. It must be well insulated from chassis, as both sides carry the r.f. voltages.

The 813 is prone to parasitic oscillation and care should be exercised to see that all earth connections are taken to a common point, except C42, the screen decoupling condenser, which must be taken to the beam plates and thence to earth.

To avoid parasitics, L3 wound on R23 and in parallel with it, is mounted against the grid pin on the 813 holder. An r.f. choke blocks r.f. to the grid current meter and the grid resistor R21. C34 also provides decoupling for r.f. remaining in the grid circuit.

No bias voltage is necessary, the p.a. valve (V7) being protected by a 6Y6G clamp valve (V8). The grid of the 6Y6G is fed from the "cold" end of the r.f. choke in the 813 grid circuit. The anode and screen of the 6Y6G are strapped together and connected to the 813 screen. With no grid voltage derived across R21, i.e. in the key-up condition, the 6Y6G draws a heavy current, and being in parallel with the 813 screen, there is a heavy voltage drop across R25, which reduces the 813 screen voltage, thus cutting the valve off. In fact with 1200 volts h.t. to the 813, the standing anode current is only 20 mA. Should break-in operation be contemplated, this feature is very useful. With the key down, there is a voltage drop across R21, which appears at the grid of V8, so cutting the valve off and permitting the 813 screen to operate normally. In the event of drive failure, even with high level modulation applied, the p.a. is fully protected.

The r.f. choke (L4) in the anode must be designed for use in a pi-network circuit and Labgear market a suitable component for this purpose which is capable of carrying 200 mA. It gives good performance on all bands from 3.5 to 28 Mc/s.

To avoid r.f. leakage into the mains, the heater supply is well filtered. The transformer is a Woden type PTF20, which delivers 10 volts at 10 amps and is centre tapped (only 5 amps is required). L5 and L6 in the heater leads are decoupled by C36, 37, 38 and 39. The transformer primary is decoupled by C40 and C41. It is most important that the voltage measured at the valveholder is 10 volts, ± 5 per cent. Both grid and anode meters are situated remote from the transmitter and connected to it by coaxial cables.

An r.f. choke C44 and C35 filter r.f. from the high voltage power supply. Both these condensers have a capacity of 0.005 μ F and some attenuation of high audio frequencies will occur when the p.a. is modulated but as a cut-off of 3000 c/s is desirable, this is not important.

The high voltage supply to the 813 should be 1000 volts to 180 mA including the screen current.

The pi-network tank has been designed for these figures.

The pi-network output tank is based on an article by H. Whalley (G2HW), in the April 1952 issue of the R.S.G.B. BULLETIN. Figures are for a Q value of 12, with 1000 volts on the anode and an 80 ohms load. An efficiency of 80 per cent on 3.5, 7, 14 and 66 per cent on 21 and 28 Mc/s is assumed. Actual figures of efficiency are very good, being 87 per cent on 3.5 Mc/s, 85 per cent on 7 Mc/s, 80 per cent on 14 Mc/s, 70 per cent on 21 Mc/s and 66 per cent on 28 Mc/s.

A separate coil is used for 28 Mc/s to maintain these figures and is wound with $\frac{3}{8}$ in. copper tubing, mounted at right angles to the main coil. The switch, the main coil and 28 Mc/s coil are a complete assembly which may also be prefabricated. C45, the p.a. tuning condenser, is below the chassis with C46 above it. C45, L8 and the switch were obtained from a TU5B tuning unit. All the wiring is in $\frac{1}{2}$ in. copper strap to lower lead inductance.

At resonance, a series tuned circuit has zero impedance. On this assumption L9 and C47, connected from r.f. output to earth, are resonated to the local Band I TV channel, resulting in a considerable decrease of harmonic output. It need not be retuned when changing frequency.

C47 need only have a flash-over voltage of about 250, as the voltage across it, and also across C46, is about 130 as long as it is correctly matched into a load of 80 ohms. The earth connection to C47 should be at the common earth point for the p.a. valve. The aerial tuning unit is fed by a link with a Faraday shield and the aerial in use on all bands is a 132 ft. long wire.

Mechanical Construction

The components of the oscillator circuit itself, i.e. the tuning and padding variable condensers, the coil and cathode

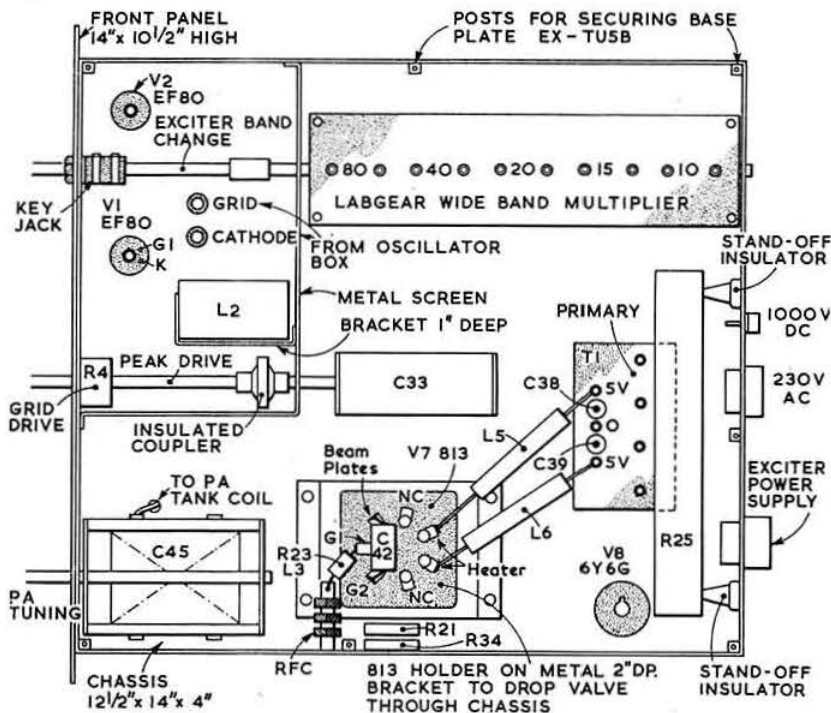


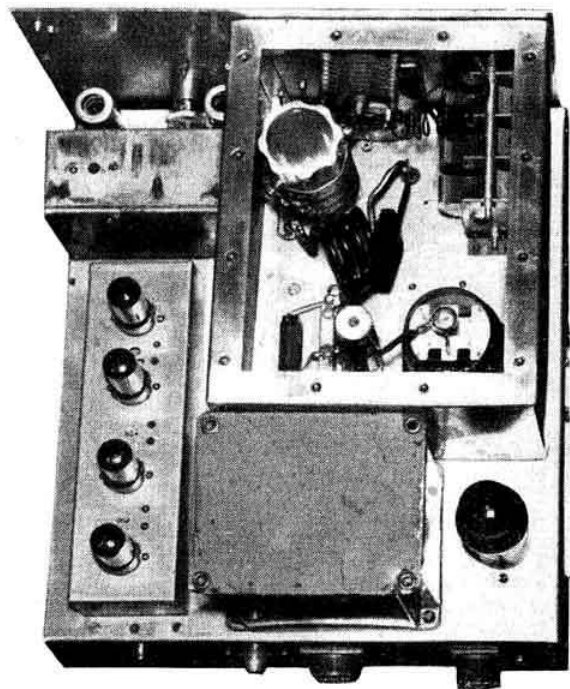
Fig. 2. Under-chassis layout of the principal components.

tap capacitors are isolated in an Eddystone diecast box, measuring $4\frac{1}{2} \times 3\frac{1}{2} \times 2$ in. with grid and cathode taps brought out to the EF80 oscillator valve (V1) by two ceramic feed-through insulators. All connections are in $\frac{1}{8}$ in. wide 18 gauge copper strip for mechanical stability.

The oscillator box is mounted on top of the main chassis, which measures $12\frac{1}{2} \times 14 \times 4$ in. The EF80 oscillator and the EF80 buffer (V2) are mounted directly on this chassis in front of the oscillator box with the tuning control running between them to the front panel. An Eddystone full-vision dial is used as shown in the photograph at the beginning of this article. The oscillator padding condenser is adjusted from the top of the diecast box.

For ease of construction, the frequency multiplier chassis was prefabricated, then wired into position on the main chassis. This sub-chassis measures $8\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ in. deep, with one side detachable, and is screwed into position against 4 B.A. hank bushes let into the side of the chassis. To give short lead lengths from the Labgear wideband multiplier unit to the doubler valves, the sub chassis is fitted on top of the main chassis just behind the oscillator box. The multiplier unit itself is installed upside down below the main chassis, with the band-change control brought through the v.f.o./buffer compartment to the front panel.

Following accepted practice, the p.a. anode circuitry, above chassis, is totally enclosed in a box $7\frac{1}{2} \times 9\frac{1}{2} \times 6$ in. high, with a detachable lid. A large hole must be made in this lid above the 813 and covered with copper expanded metal (not mesh) to provide sufficient ventilation for the p.a. valve which is dropped through the chassis to a depth of $2\frac{1}{2}$ in. to avoid instability.



This picture shows the general arrangement of the various units. The v.f.o. in its diecast housing is at the top left with the p.a. screening box to the right. The multiplier sub-chassis, mounted above the main chassis, is immediately below the v.f.o. unit with the 813 heater transformer next to it. The clamper valve is in the right hand bottom corner.

The heater transformer for the p.a. is mounted behind the valve on the back of the chassis with the 6Y6G clamper to its left. All external power connections are by fully screened plugs and sockets on the back drop of the chassis.

The layout is shown in Fig. 2 and in the photographs. Throughout the transmitter, all leads which are "cold" to r.f. (i.e. heaters and h.t.) are fully screened to avoid r.f. finding its way into the power supply and thence to the a.c. mains. A mains filter is installed between the power supply and the a.c. supply to filter any remaining r.f. to earth.

Results

After more than a year of operation, this transmitter has satisfied all demands. Operation at 150 watts c.w. during TV hours is possible on all bands except 21 Mc/s, which is approximately half the Channel 1 frequency. With a low pass filter in circuit, this should also be cleared. Operation has been mainly on c.w., with a hundred countries worked. No drift has ever been reported on any band and the note is invariably T9.

All in all, a very satisfactory transmitter.

R.A.E.N. Inter-County Exercise for B.R.C.S. and Coastguards

A SUCCESSFUL R.A.E.N. exercise was run in collaboration with the British Red Cross Society and the Coastguards Service during the evening of September 24, 1958.

Two mobile station (G2DQ and G3CIM) were stationed at B.R.C.S. headquarters in Clacton-on-Sea, and two others (G2CBX and G2YH) at B.R.C.S. headquarters in Southend-on-Sea. Incidents were reported off Walton and Westcliff and a car set out for each locality accompanied by members of the Red Cross Ambulance, and Coastguard services. Rockets were fired and "injured people" were hauled up the cliff by ropes to be attended to by members of the Red Cross. Messages were passed direct from Clacton to Chelmsford headquarters (G2HPF) or viz. mobiles G2OR and G3EHZ, and also from Southend via G3GNQ or G3IIS. The messages were then relayed to G3ERN (Harlow) who re-transmitted them to G3FZL (Forest Hill) who in turn passed them on to B.R.C.S. headquarters, London (G3IIR) via a 2m link.

All messages were handled correctly without error, a fact which proved that such messages could be passed over long distances by day or night satisfactorily.

Members of the Press were present at B.R.C.S. headquarters in London and reports on the exercise were published in the National Press the next day.

Can You Help?

● C. W. I. Castles (G13FKL), Governor's House, Malone Training School, Balmoral, Belfast, who requires the circuit diagram of the Indicator Unit S.L.C. 7?

● J. Clayton (A.1641), 205 Beehive Lane, Chelmsford, Essex, who requires the manual and/or circuit diagram for the Admiralty P.104?

London Lecture Meeting

Friday, October 24, 1958

"Radio Signals From Earth Satellites"

by A. W. Nichol, B.A.

(Cavendish Laboratory, Cambridge)

Institution of Electrical Engineers

Savoy Place, Victoria Embankment

Buffet Tea 6 p.m.

Lecture 6.30 p.m.

Stereophonic Recording

PART 2.—HIGH QUALITY SYSTEM FOR STEREOPHONIC AND SINGLE CHANNEL REPRODUCTION

By F. C. JUDD (G2BCX)*

A SYSTEM for stereophonic and single channel fidelity tape recording has been developed with the aid of recently published circuits and other information given in the various references quoted at the end of this article. A schematic diagram of the writer's own equipment is shown in Fig. 1. The various units have been adapted for stereophonic recording with a suitably modified tape deck and additional recording heads. Multiple recording techniques are available by using both halves of a standard quarter-inch tape individually or simultaneously, e.g., a recording from either track may be transferred to the other together with added material. Echo effects are obtainable with a third head which is also used for direct monitoring. It must be emphasized, however, that the entire system is an individual requirement designed to provide the utmost flexibility.

The main amplifier which has been duplicated for stereophonic reproduction, has a frequency response which is flat from 30 to nearly 20,000 c/s, with bass lift to plus 15db and treble lift to plus 8db. The curve A (Fig. 2)

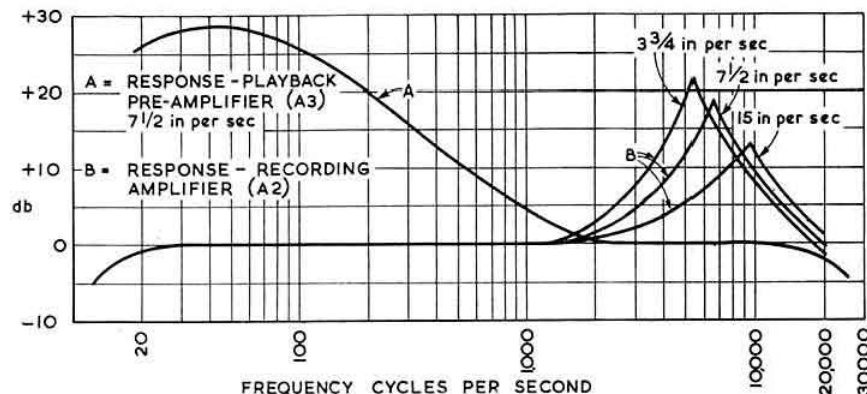


Fig. 2. Frequency response of the playback amplifier.

shows the overall response of the playback amplifier. Curve B shows the response from a playback head at a tape speed of $7\frac{1}{2}$ in. per second, and takes into account the overall response of the recording amplifier, the recording head and the playback amplifier.

Stereophonic recording and playback was discussed to some extent in Part 1, and some further notes will be given later. Excellent stereophonic recording and playback has been achieved with spaced recording heads. It should be noted, however, that the use of commercial "Stereosonic" recordings requires an "in line" recording/playback head.

The Amplifiers

The main playback amplifier (Fig. 3) is designated A.1 for reference purposes and was designed expressly for tape playback. The input is switched so that a head already connected may be changed over for recording directly from the amplifier A.2. For convenience the recording bias oscillators were mounted on the same chassis to provide short screened leads to the head changeover switch.

V1 is the head pre-amplifier valve, followed by V2 with

a negative feedback equalizing circuit providing approximately 25db lift at 40/50 c/s. A low impedance head would require a matching transformer.

Between V2 and V3 bass/treble controls are provided but with these at midway position, the response of the amplifier after V2 is flat from 30 to 20,000 c/s. Pickup or radio could be connected to the grid of V2, in which case the bass equalizing circuit would have to be switched out as indicated in the circuit diagram. The remainder of the amplifier is of conventional design for high quality reproduction with negative feedback applied between the output and the cathode of V3 (a). (25db down on the loop gain). A pair of EL84s in push/pull are used in the output stage with a transformer similar to that specified for the Mullard 5-10 amplifier. In the writer's equipment duplicate bass and treble speakers are used with a crossover frequency of 1 kc/s.

Owners of high fidelity amplifiers such as the Mullard 5-10 and the Osram 912 could use them for tape playback

but an additional circuit (Fig. 4), would be required for tape pre-emphasis and amplification. For reference this amplifier is designated A.3. V1 is a high gain stage for use with an EF86 or equivalent valve. A gain control is provided at the input to V2(a) with a switched selective feedback between the anode and grid of this valve. With C4 and VR1 in circuit, a bass lift of 25db at 50 c/s is obtainable for pre-emphasis on tape playback. With C5 and VR1 in circuit the amplifier response is substantially flat. VR1 is useful in multiple recording techniques to provide some control over the bass response [7].

Additional amplification is provided by V2(b) for monitoring with headphones. The amplifier is intended for a tape speed of $7\frac{1}{2}$ in. per second only. If operation for three tape speeds ($3\frac{3}{4}$ in., $7\frac{1}{2}$ in. and 15 in. per second) is required, the selective feedback circuit of Fig. 5 could be used.

The Recording Amplifier (A.2)

The circuit of the recording amplifier (Fig. 6) is based on the Mullard type B [6]. It is intended for recording only but should a combined record/playback system for use with an existing high fidelity power amplifier be required the complete Mullard circuit which has been designed for three speed tape playback and recording is recommended.

For stereophonic recording the amplifiers must, of course, be duplicated. The frequency response must conform with the C.C.I.R. recommendations and in view of this, switched negative feedback pre-emphasis control for three tape speeds is provided. The response curves (Fig. 7) were taken from one of the writer's amplifiers and compare favourably with those published by Mullard Ltd. E.F.86s are specified for the three stages. V1 is the microphone pre-amplifier followed by V2 with the negative feedback (twin T) equalizing network between anode and grid. Provision is made at the

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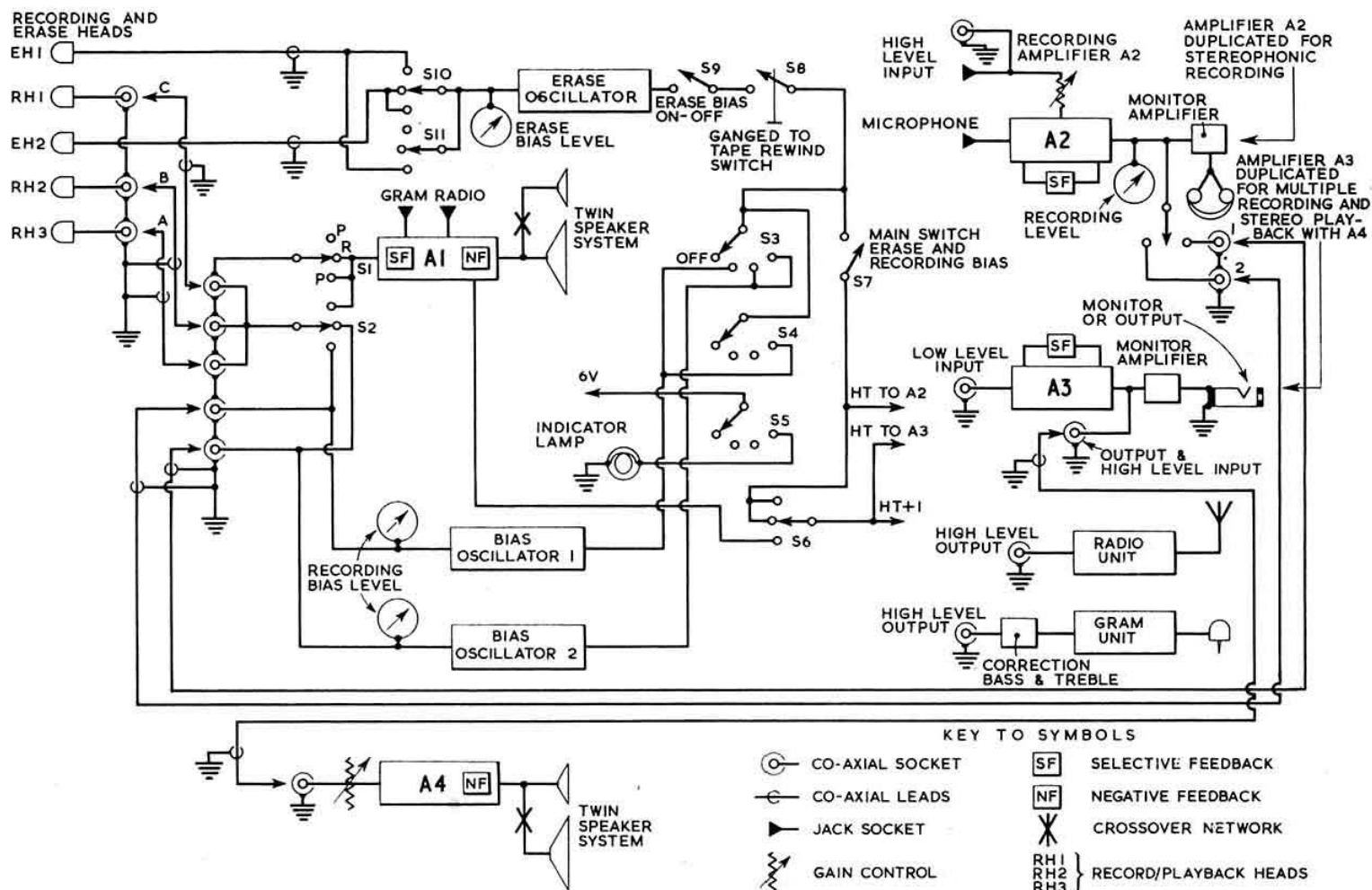


Fig. 1. Block diagram of the stereophonic equipment used by G2BCX.

by starting the sound on one side and continuing it along a curved line in front of the artificial head, or a straight line in front of two spaced microphones. The illustration of Fig. 8 may clarify this. The gain of each recording channel must be set to produce the same sensitivity from each microphone.

Monitoring may be carried out with headphones by connecting one ear piece to the right and one to the left hand

present. Whilst there is undoubtedly room for experiment in this direction the occupation of two channels on already overcrowded frequency bands is not likely to prove popular and a system for transmitting the left and right audio signals over a single r.f. channel would seem most desirable. In addition to the activity of various professional recording concerns in this new trend in sound reproduction, the B.B.C. as many already know have made stereo transmissions on

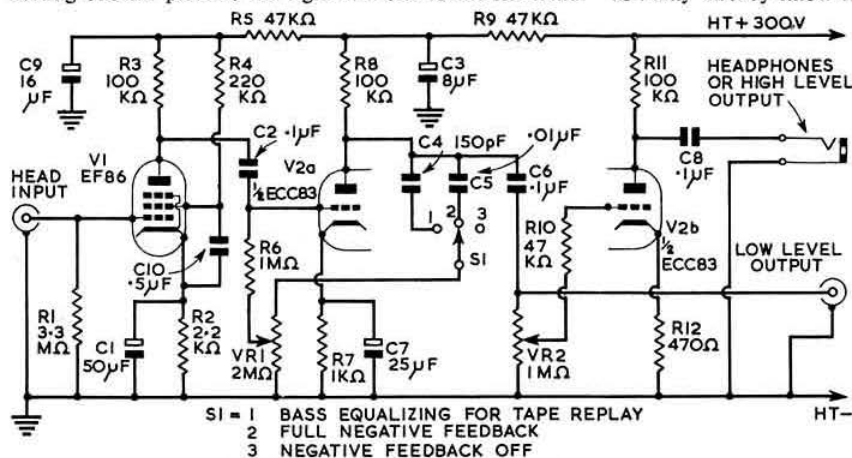


Fig. 4. Playback pre-amplifier (A.3) for use with Mullard 5-10 or Osram 912 high fidelity amplifiers. V1, EF86 (Mullard); V2, ECC83 (Mullard).

channel. If the recording is good a moving sound should appear to travel from one side, through the space between the two loudspeakers, to the other side. The illusion of sound moving away from or towards the listener is apparent if the original sound is made to move towards or away from either one of the microphones.

Loudspeakers

Placing the loudspeakers calls for a certain amount of experiment but is not entirely critical. The diagram of Fig. 9 will serve to illustrate the best listening position for a given distance between the two loudspeakers and the angle at which they are set. The writer has achieved best results with one in each of two corners of an average sized living room, spaced approximately 9 ft. apart.

Stereophonic Transmission

Reference was made in Part 1 and in a report recently published in the BULLETIN to a stereophonic transmission from G3JHL to G2BCX who recorded the live transmission. G3JHL used spaced microphones. Various moving sounds as well as speech were transmitted and despite noise and lack of gain on one channel (this was compensated for to some extent on playback), the stereophonic effect was

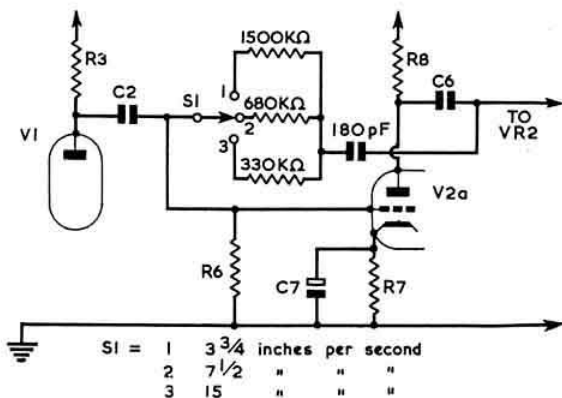


Fig. 5. Equalizing circuit for use with tape speeds of 3 3/4, 7 1/2 and 15 i.p.s.

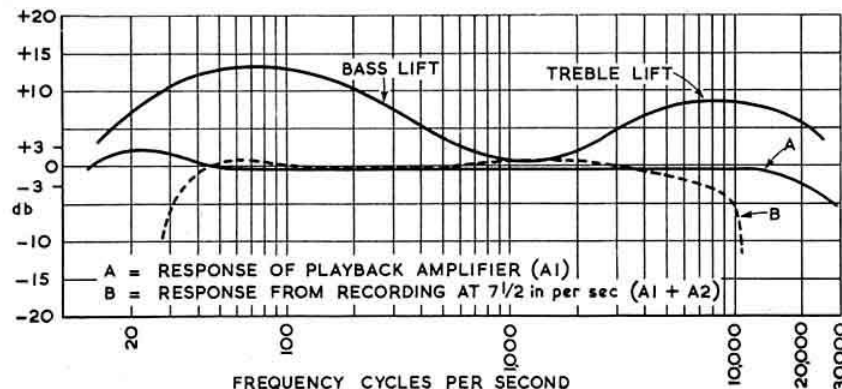


Fig. 7. Response curve of one of the writer's amplifiers used for stereophonic work.

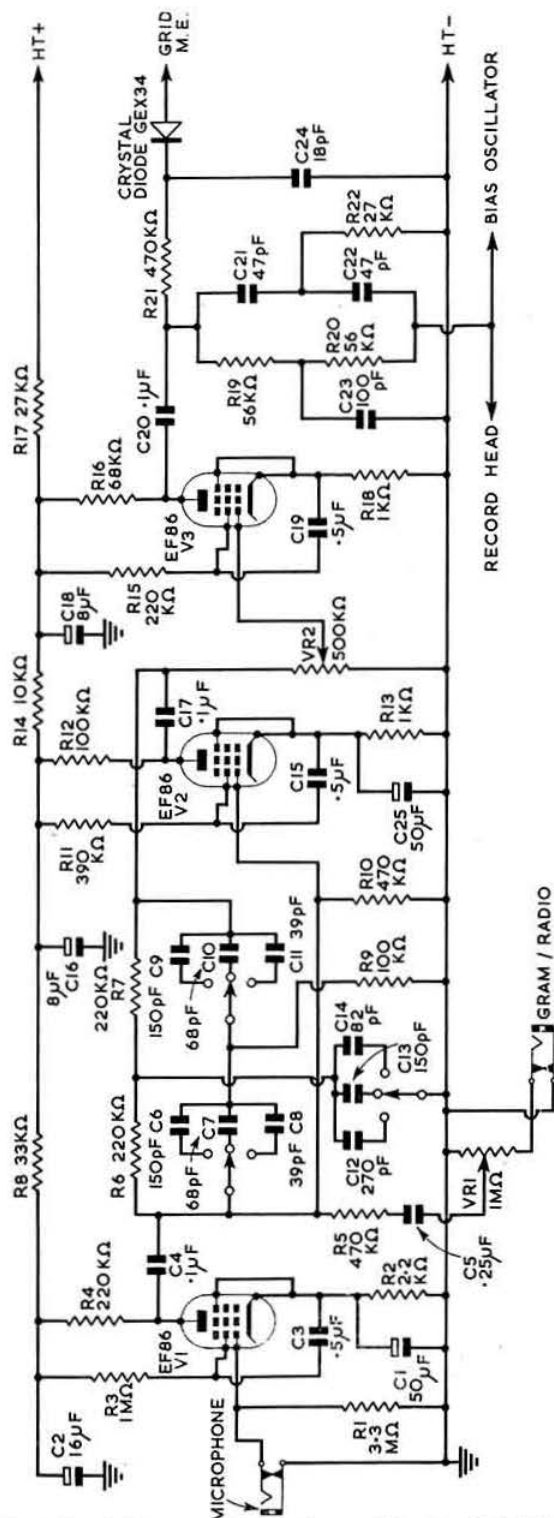


Fig. 6. Circuit diagram of the recording amplifier A.2. CR1, GEX34 crystal diode or equivalent; V1, 2, EF86 (Mullard).

both a.m. and f.m. channels and have promised that more will take place in the near future.

To conclude, the writer must stress that this article has been written mainly to suggest a practical approach to stereophonic recording and reproduction with limited equipment and facilities. The system relies on intensity differences in recording and playback and should not be confused with the "Stereosonic" system referred to in Part I.

Nevertheless satisfying results have been obtained but could no doubt be improved when details of new circuits and developments are forthcoming.

The writer would like to thank Mr. H. A. M. Clark, B.Sc.(Eng.), M.I.E.E. (G6OT) for his suggestions and G3JHL and other East London amateurs for their co-operation.

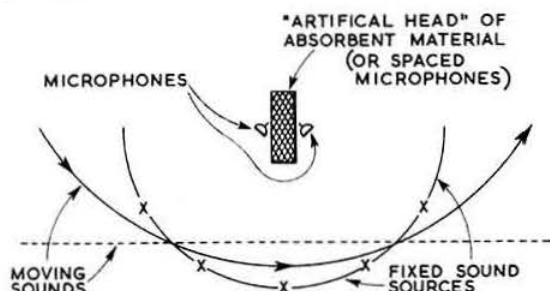


Fig. 8. Use of an "artificial head" in stereophonic recording.

References

- [1] "Magnetic Tape Amplifier." A. W. Wayne, *Wireless World*, March 1956.
- [2] *Mullard 5 valve, 10 watt High Quality Amplifier*, Mullard Limited, price 2s. 6d.
- [3] *High Quality Sound Reproduction*, Mullard Limited, price 3s. 6d.
- [4] *Radio Designer's Handbook (4th Edition)*. F. Langford Smith. Chapters: 7, 12 13, 14, 15, 17, 18 and 20. Iliffe & Son Ltd.
- [5] *From Microphone to Ear*. G. Slot. Philips Technical Library.
- [6] *Circuits for Tape Recorders*, Mullard Limited.
- [7] "Effects with a Tape Recorder." F. C. Judd, *Radio Constructor*, XXX 195.

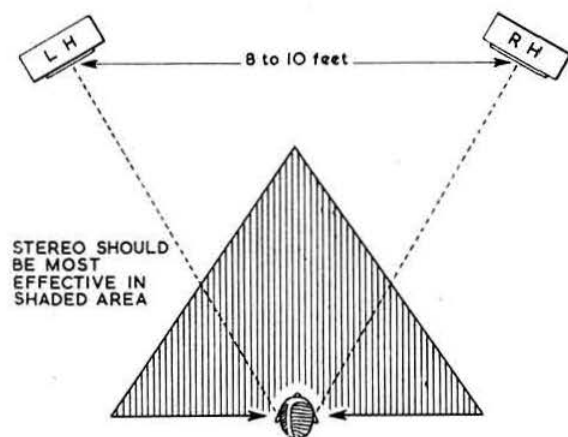


Fig. 9. Arrangement of the loudspeakers for stereophonic reproduction.

A Top Band Portable Transmitter-Receiver for R.A.E.N. Use

By G. LANCEFIELD (G3DWQ)*

THE equipment to be described was designed for use in connection with the Radio Amateur Emergency Network and is intended for short range phone working on Top Band with a random length of aerial wire, the main consideration being portability. It can, of course, be used for normal portable working on that band with a longer aerial and also for local nets from the home station.

The complete station is carried in a small attache case which houses the transmitter/receiver, batteries, headphones, key, aerial wire, etc.

The Receiver

The receiver circuit is a standard five valve superhet using the 1.4 volt series of valves. The input for the r.f. stage is taken from the p.a. anode, the aerial tuning circuit being common for the transmitter and receiver. This has several advantages. For example useful space is saved, the receiver r.f. stage is matched to the type of aerial in use, and the r.f. and p.a. stages can be tuned simultaneously in either the send or receive positions.

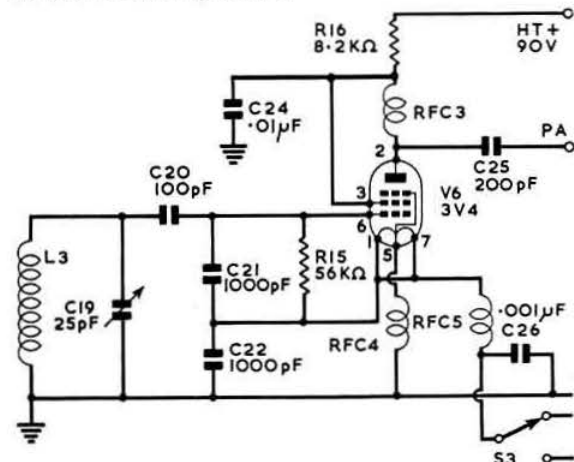


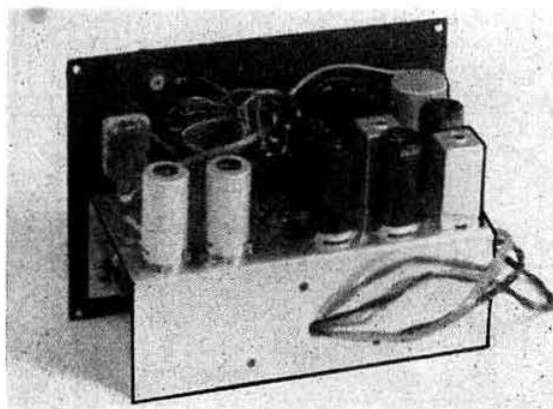
Fig. 1. Alternative v.f.o. circuit. C20, 21 and 22 should be silver mica condensers. L3 is 75 turns 26 s.w.g. enamelled close wound on a 1 in. diameter former 1½ in. long.

The mixer input and oscillator tuning are separate, small bandspread capacitors being used to tune each coil in conjunction with fixed padding capacitors. In practice the receiver is quite easy to tune without the use of slow motion drives.

The rest of the receiver circuit follows standard practice, the last two stages being switched by the send/receive switch to act as the modulator on transmit, the output transformer primary acting as the modulation choke and the secondary circuit being broken to prevent audio feedback. There is no gain control in the audio circuit, the full output of the crystal microphone being used to give about 90 per cent. modulation. The send/receive switch cuts out the filaments of the first three stages in the receiver when in the send position, leaving V4 and V5 operating to act as the modulator.

The Transmitter

The transmitter uses a two-stage circuit with two 3V4 valves as v.f.o. and p.a. The v.f.o. is a modified Colpitts



Internal View

The receiver portion is to the right of the chassis and the transmitter to the left. The receiver valves are in the black screening cans. The larger screening can near the front panel at the right is the mixer coil. The oscillator coil, v.f.o. coil and output transformer are mounted under the chassis.

circuit which has proved very stable. The original design employed an electron coupled Colpitts circuit, but this was discarded because of the need for filament chokes with a very low d.c. resistance, and such chokes were not available. One model has been built, however, to the original design, and the circuit is given for reference in Fig. 1.

The p.a. is capacity coupled to the v.f.o. and although the value of coupling capacitor is rather large no pulling is experienced. The aerial is directly coupled to the p.a. coil and the large number of taps on the coil, selected by the switch, enables practically any length of wire to be used. On transmit the send/receive switch applies filament voltage to the transmitter valves and connects the p.a. anode to the anode of the receiver output valve. It also switches another resistor across the bias resistor to maintain the correct bias for V5. The net switch applies filament voltage to V6 whilst receiving so that the v.f.o. may be "netted."

One 90 volt high tension battery (Ever-Ready Type Portable 61) is used for the transmitter/receiver, and a 1.5 volt battery (Ever-Ready Type AD14) for the filament supply.

The circuit of the complete transmitter-receiver is given in Fig. 2.

Construction

The transmitter/receiver unit is built on a chassis 7½ in. long by 3½ in. wide by 2½ in. deep, with a front panel 8 in. by 6 in. and fits into an instrument box, 8 in. by 6 in. by 4 in.

The photograph gives a good idea of the construction and layout. Miniature i.f. transformers are used and providing small types of resistors and capacitors are also used no difficulty should be experienced in wiring.

Adjustment

Alignment of the receiver is very simple, no tracking or padding of the r.f. circuits being necessary due to the

* 35 Brixton Road, Frenchwood, Preston, Lancashire

"net" position and listening on the station receiver or by using a frequency meter and adjusting the core of the v.f.o. coil (L3). Set the v.f.o. condenser to half mesh and tune the coil slug until the frequency is 1.9 Mc/s, then check that the condenser covers the band, which it should do with a small overlap at each end.

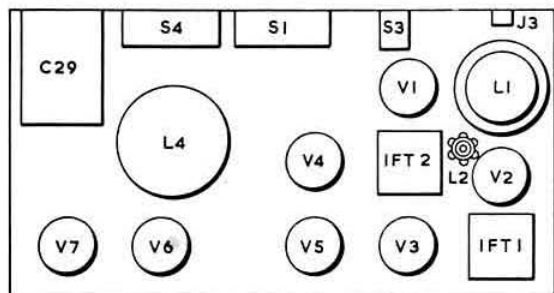


Fig. 3. Chassis layout for the Top Band portable transmitter-receiver.

Results

Two sets have so far been built and are giving excellent results for the low power input—about half a watt. Speech quality is very good, and whilst not designed for c.w. the p.a. can be keyed by means of the jack socket on the panel. The note is T9. This socket is also used for metering the p.a. current.

With a kite aerial RS59 reports have been received at 10 miles distance. Using the normal station Top Band aerial contact has been maintained with a mobile station up to about 10 miles depending upon the terrain. With a random length of wire (20/30 feet) dependable cross-town working can be achieved.

Astronautics

A special course of eight lectures on Astronautics (space flight) will be given by L. S. Snell, A.M.I.Mech.E., A.F.R.Ae.S., F.B.I.S., and G. S. Brosan, Ph.D., M.I.E.E., F.R.A.S., F.B.I.S., on Monday evenings from 7 p.m. to 9 p.m. commencing on October 20, 1958, at the Willesden Technical College, London N.W.10. Syllabus: Propulsion and propulsion systems; Construction of vehicle; Steps; Guidance; Orbits; Ancillary problems. Time will be allowed for discussion on each evening. Fee for the course, £1.

All enquiries and applications for admission should be made to Willesden Technical College, Denzil Road, London, N.W.10.

Large Attendance at Bridlington

THE North-east of England Official Regional Meeting held in the Spa Royal Hall, Bridlington, E. Yorkshire, on Sunday, September 21, 1958, attracted an attendance approaching 200, including about 40 ladies.

The meeting was preceded by an inspection, by the Mayor of Bridlington (Alderman O. S. Clapp, J.P., C.C.), of some 40 mobile stations, mounted in cars, vans and shooting brakes, many of which had come from long distances to support the Rally.

It is unusual for a civic leader to have knowledge of radio matters but the present Mayor of Bridlington, an ex-R.A.F. Wing Commander who lectured on radar and radio during the last war, provides an exception. Winner of the prize for the best piece of mobile equipment on display was Mr. A. G. Stormont, G3GWR of Sheffield.

Prior to the opening of the business meeting Alderman Clapp extended a civic welcome to those present.

It had been anticipated that the President (Mr. L. E. Newnham, G6NZ) would be present at the meeting but a severe cold prevented his attendance which left the responsibility for discussing the current activities of the Society and of answering questions on the shoulders of the General Secretary. During the day, Mr. Clarricoats had the pleasure of meeting a number of old friends (including Tommy Woodcock, G6OO; Arthur Watson, G6UJ; Eric Martin, G6MN and George Wigglesworth, G2BH) who had supported him at Yorkshire meetings more than a quarter of a century ago when the "little black book" was famous.

The O.R.M. was organised on behalf of the Region 2 Representative (Mr. Jack Petty, G4JW of Sheffield) by Mr. Cliff Metcalfe, G3DQ (Zone A Representative) and Mr. Arthur Dunn, G2ACD, who had the enthusiastic co-operation of members of the Scarborough Amateur Radio Club. The control station for the Mobile Rally was operated from the Spa Royal Hall by Mr. Harry Jones, G3GBH.

The organizers wish to place on record their thanks to the Bridlington Corporation for the use of the Spa Royal Hall at no cost to the Society, and to the many radio concerns and local residents who donated gifts to the free draw and raffle. The Mayoress and Mrs. Metcalfe presented the prizes.

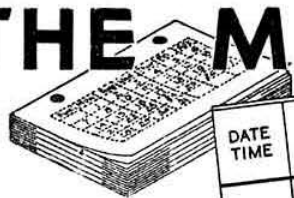
VE2AWY Enquiries

SOME months ago VE2AWY received on loan from a U.K. amateur a copy of the R.S.G.B. BULLETIN containing an article on the G4ZU beam. VE2AWY promised to return the issue after perusal but the sender omitted to give his name and address. If this should catch the eye of the person who made the loan perhaps he will drop a line to VE2AWY.



The traditional Ham Party held at the home of R.S.G.B. Vice-President, T. A. St. Johnston, G6UT, Little Hallingbury, Hertfordshire, took place this year on August 31. "Mine Host," in shirt sleeves in centre of picture, entertained more than 80 members and their ladies. Old timers present included G4UX, 5UM, 6HU, 6LL and 6WU.

THE MONTH



DATE TIME	FREQ.	STATION CALLED	CALLED BY	STATION HEARD OR WORKED				MY SIGS.			TIME OF ENDING QSO
				R	S	T	KC/S OR DIAL	R	S	T	

ON THE AIR

ON THE AIR

By S. A. HERBERT (G3ATU)*

LAST month saw a vast improvement in conditions. Two results which are particularly pleasing to your commentator are, first, the large post-bag and, second, the steady increase in the number of contributions from active amateurs, including several keen newcomers, some of whom have been licensed for a very short time. To them and their fellows will eventually fall the task of taking over from the old-timers. Meantime, before the old and medium-time brigade fade from the picture, let's all join in the fun!

Ten Metres

After a lapse of some months, ten is once more open for business. Knowledgeable searchers watch the band for signs of east to west openings around the end of August and sure enough this year came the thrill of hearing a dormant band bursting to life again with loud signals coming from all parts of the U.S.A., Canada and eventually from just about everywhere. The usual snags remain, of course. There is little c.w. as usual for most of the time and after midday, the loud and numerous W/VEs make things tricky for the rest of the world. But ten is still a rewarding band and some very nice DX may turn up there at any moment.

G3AAE (Barnet) rightfully remarks that if only some of the rare DX which so often competes with S9 short skip QRM on 14 Mc/s would come up on 28 Mc/s c.w., what a pleasure it would be. True, very true. John did find **CR6CK** on the key, but he had to use phone to work **VK9LE** (Cocos, 12.40), **CT2AI** and **VP8DS** (11.30: QSL to Les Hardy, Box 185, Port Stanley, Falkland Is.). So far he has worked Danny Weil in all four places during the present series and he adds "No doubt some bright spark will soon think of a "Worked All Danny" award!

G3FPK (London, E.10) found ten worth attention to the extent of five new ones: an EA on phone and F, **CX9AJ**, **ZE3JO**, plus **PY** on the key, followed by a 100 per cent c.w. contact with **ZD7SA**. **CR6** and **JA3** completed the haul, while **KG4AU** and **ZS3AG** were heard on A3. **G3LKZ** (Cleadow, Co. Durham) is welcomed to the fold and his recent QSOs were with **CR6CK** (17.30) on c.w. and **ZD6RM** (11.20-12.00), plus **CT2AI** on phone.

Equally welcome is **G13JIM** (Belfast), whose **LG300**, Eddystone 888A and three-band quad beam resulted in QSOs with **ZD2NWW**, **ZE1JV**, **VQ2SB**, **FB8ZZ**, **CR6CN** and **CR7EA**, all on A3. **G3EYN** (Macclesfield) forged ahead with **MP4BBE**, **VS6EE**, **JA3AH** (11.00), **VS9MA** (13.00), **VU2RM** (14.40) and **CX**—all on c.w. **G3ATU** has been hearing **VU** as late as 19.30 G.M.T., which is unusual. **HI8GA** is often on A3.

B.R.S.20317 (Bromley) reports **VP3HAG** (15.00) on A3 and **CM2US**, **VS9MA** (19.00, '104), **ZD7SA** (12.00), **FF8** and **UF6** on A1. **B.R.S.2292** (Hounslow) had a good time on the phone band and mentions **FM7WU**, **TG9AZ**, **VE3BQL/SU**, **PJ5AM**, **VP9DU** and lots more, with **KH6AFS** a good one on c.w. Charles was impressed with the fact that ten has been open until late at night, which is a healthy sign. Fourteen-year-old **A.1583** (Penryn) heard

lots of African phone, including **ZS3B**, but **VQ1DE** (13.10) seems a little suspicious.

Fifteen Metres

With ten wide open, one might expect a lively state of affairs on fifteen and so it has proved. There has been something for almost everybody and a few rarities even forsook twenty to appear on the band. **G6XL** (Leeds) talked on phone to **ET3US** (15.20, '120), **VS9MA** (15.40, '120), **KB6BH** (Canton Is., 10.00, '260) **KR** and **JA** and he QSO'd **DU7SV** (06.45, '105) on the key. **G6GH** (Boston) succeeded with **FB8XX** (13.20) and **VP2AY** (19.15) on c.w. but missed **HV1CN**.

G3KAA (Luton) worked **ST2AR** (13.00) and **TI9AC** (22.30), who he suspects a little, though the TI was "knocking them off" in true expedition style, allegedly from Cocos and asking for QSLs via **W2NSD**. **G3GMY** (Potters Bar) worked **JA7AD** (08.40) and a new one, **VP7BT** (12.30) on c.w.

G3MWX (Southwold) writes "as a very new ham" and he remarks aptly that operating on the DX bands is rather similar to a non-swimmer falling in the deep end of a swimming pool! As a wartime W/Op with the R.A.F., he should soon get the feel of things. Meantime, with a R208 and a simple dipole, he finds Ws easy. **ZC4AM** and **KP4AOO** were also worked on the key.

Ex-VS1HQ, now **G3LCS** (Wolverton) is quite active once more with a 45 watt home-built rig and a **G5RV** aerial, soon to be replaced by his trusty two band quad. Des caught **ST2AR** through the usual pile of Europeans with their "CQ DX" and heard **FB8ZZ** (16.50, '14040) struggling with the pack and being smothered in the process. "All these wallahs should go to the Far East for a spell at the DX end of things," he says, "then they would appreciate good operating." **VP8CR** was heard, vexingly just as he sent "CL" and **KP4** and **KZ5** were working local Ws. No chance there. Des hears from **VS1HU** (see later) of the latter's plans to work from **VS2**. As most **VS2s** are on 7 Mc/s phone only c.w. operation on the DX bands will be welcome.

G3AAE worked **YS1GA** (23.00) for a good one on A3 and John is relaxing ready for **VP2AY**'s next appearance elsewhere and for the blitz on **HC8AGO**, scheduled to appear late in September. **G3FPK** unsuccessfully challenged **ET2VB** (14.00), **FQ8AJ**, '8AP, **VS9MA** (what a racket!). **W4DGW/OQ5** (anchored in the Congo River) and **XE1AX**, but he had more luck with **VP2AY** (Antigua), **VE7KX**, who has a rhombic, and sounds like it, **KL7**, **UA9** and **VQ2BK**, who turned out to be **ex-G3GPQ**, now in Lusaka. **W7ITN** (Idaho) and **W0EOZ** (N. Dak.) were QSO'd, as was the very new **WV2AAC**—all these on c.w. Norman says if only the jammers would blow up, he'd spend more time on the band!

G3LKZ talked to **VQ5EK** (15.00), **VP2KF** (St. Kitts, 17.30), **VS1FJ**, **ST2AR** and **VP7BT**, while **G13JIM** worked **VS1GX**, **FB8XX** (c.w.), **VP2KF**, **FS7RT**, **KW6CE** (s.s.b.) and **VP1EE**, **VP4MM**, **VS2DQ**, **OA**, **CO** and **KL7** (A3). **G3EYN** added new ones in **VP2AY** and **HV1CN**, the latter, he understands, with **WITYQ** at the key, which would ex-

* Roker House, St. George's Terrace, Roker, Sunderland.

plain the c.w., so strange coming from a former "phone only" station. Other c.w. DX worked was VS9MA (17.00), LA2JE/P (13.00), JT1AA (13.00), VS6EC and VK6EJ.

Good ones for B.R.S.20317 were YA1AA (14.00 to 17.30), CT2AI, FQ8HA, VP8DG, VP8DK and XW8AH (c.w.) and VK9CP and YA1AA again (A3). B.R.S.2292 logged OR4OR, VS9AS, KH6, ET2 (c.w.) and MP4B and 9K2 (A3), while A.1583 heard VQ3VQ, VQ5FG and CR7DQ on A3. B.R.S.21918 pulled in HS1E (21.00), VU2SS, SV0WT (Crete) and EA9EI (16.00) on A3.

B.R.S.18017 (Warwick) mentions EL2N, ZD1EO, MP4BCC (ex-MF2AA), H18GA, K5JKP/AM (in mid-Atlantic), KH6OR and VE8TO (Port Simpson), heard on phone. B.R.S.20135 (Newport, I.O.W.), left with a domestic receiver while his SX28 is being overhauled, managed to hear AP2AD, ZK2AB, VU2EJ, ZD1FG, ZD6RM, ZL and VK3, VK5 and VK6, no less!

B.R.S.20104 (South Harrow) remarks on TI9AC (22.00, '050), whose plea for QSLs via the Editor of CQ, may indicate that he may have been on Cocos after all. W0PBW/ZK2 is reported on the h.f. end, but VRI1A has never been on 21 Mc/s. Further news from Goff is that Chatham Is. is to count as a new one (correct), that VU5 may have been on in September and that VQ3GE and VQ4ERR may operate s.s.b. from VQ1 in November.

A.1622 (York) used a 19 Set and an RF24 with two r.f. stages to log phone from 9G1BV, CR4AD (21.30), ZS81 (19.00), YA1AA (19.30), KZ5KA (a YL) and VP8CV (Port Stanley, 20.30). B.R.S.20106 (Petts Wood) heard the rare CR5SP (St. Tome) on phone, together with OR4OR, ZD7SA and ZD1EO, while XE1PJ was on c.w. B.R.S.21279 (Birmingham) heard KB6BH on A3 and got his QSL within a month! Martin heard KG4AY being called by weird-sounding KW4AYO, KW4ZYS and KW1VAC, but he knew they were far from Wake Is. In fact, some of the W/K/N series is completed and the F.C.C. is issuing new calls with an extra prefix letter. In California, for instance, a new licence would not be W6 or K6, but, say, WV6, while a novice call would now be KW1, KW2, etc., followed by three letters. Martin missed FO8AT, YV0 and VP2KF, but he did get VQ9GU and various Danny VP2s. He hears that OK7MZ/ZA and OK7ZH/ZA will be active for a week in December on 14, 21, 28 Mc/s c.w. and s.s.b., ere proceeding on an extensive and lengthy trip covering many strange countries, from all of which they will try to operate. OK1MB stays in Prague to deal as best he can with the pile-ups. G3AAM tells Martin that AC4AX is on 14100 A3.ZL1ABZ is slated to appear on 14 Mc/s phone from September 27. W3ZA/3W says QSL via W2JXH.

The Twenty Metres Tale

G3IGW (Halifax) finds TVI still a problem, but Mike worked new ones XE3BL, HK4JC, UO, UD, UF and tried for FO8AT and VP2VB (c.w.) before turning to other bands. G6XL did work the FO8 and KC4USB (06.00) on c.w., while phone QSOs of note were with VR2BJ (06.40, '140) and ZL3DA (Chatham Is.) on s.s.b.—06.30, '310. G6XL used A3 to make the QSO and he heard VK9AD (Norfolk Is., 06.30, '165), too weak to work, while a W5 was calling VR1C (06.35). G6XL has reached a respectable 214C post-war, with 201 confirmed so far.

G3KAA worked VP2KF and VP2AY after 22.00 G.M.T. and says Danny is always on 14075 kc/s, but listens ten kc/s lower. Len worked HV1CN on c.w. and will be relieved to know about the W operator. He finds that AC4RF's book, *Captured in Tibet*, is now available in cheap form at a price of 2s. 6d. G3GMY worked new ones VQ3CF, ET2KY, UN1 and UA9, plus UA0KAR (Dickson Is.) and JA (c.w.).

DX Television Predictions for November 1958

Prepared by J. Douglas Kay (G3AAE)

Barbados	1145/1430	Bombay	0830/1015
New York	1400/1615	Colombo	0745/1400
Trinidad	1130/1415	Karachi	0830/1100
Rio de Janeiro	1030/1400	Singapore	0900/1300
Aden	0830/1200	Cairo	0800/1300
Baghdad	0800/1400	Accra	0830/1200
Bahrein	0800/1215	Dakar	1000/1200
Cyprus	0800/1330	Nairobi	0800/1300
Tel Aviv	0830/1330		

During the past two winters the Channel 1 B.B.C. television transmissions have been received by amateurs in many countries in all six continents. The above predictions indicate the times when the B.B.C. sound transmission on 41.5 Mc/s may be expected to be audible in the locations indicated. The video frequency for this transmission is on 45 Mc/s. All the above times are G.M.T.

G3MWZ has still to solve his TVI problems, but during non-TV hours, he gets across the Pond well. However, he will very much appreciate listeners reports from outside Europe. G3AAE found YS11M on phone and worked him (07.45), then settled with FP8AR, HC41M (06.30) on the key.

G3FPK troubles only one TV set on twenty and when it went away for repair, he seized the chance to go on in the evenings. "Now," he says, "I know when the bright boys work all this exotic stuff!" HV1CN, FP8BB, 15AAW (18.30, '044), JT1AA and VPs '2GJ, '2KF and '5BL, WIRHO/KG6 (20.00, '048) XZ2TH were called. Happily, FQ8AP, a new one who has already QSL'd, UA0KDA (Z19) who answered a call to a JA, YV5GO and ZD2FNN were worked, bringing the 20m total to 118.

G3LKZ battled successfully with CR9AH (21.00), W3ZA/3W (Saigon, 16.30, '020), VS9MA (17.30), 9K2AT and U18AK, all c.w., while G3JIM used A3 to QSO XE1DT, YS11M, VP1FL, TG9AL, T12, HK OA and PJ with FM7WU on the key. G3EYN used c.w. and worked K5BSF/KG66, UA0RK, T12PG, VQ8AQ, FP8AR, VP8DN, HV1CN, ZS6IF/ZS7, all evenings and ZK1AK (08.45).

B.R.S.20317 was pleased with HV1CN and also logged FB8XX, FB8ZZ, JT1AA (15.00, '050), JZ0HA (14.00, '076), KS6AG (12.00, '066), UA1KAE/6, VK9NT, '0KT, VQ6AB, '6AQ, VQ8AJC (15.00, '048) with a new rig and W3ZA/3W (15.00, '055). B.R.S.21918 heard VS9AJ on phone, while B.R.S.20104 persevered with c.w. to log CE9AP (22.40, '020), KS6AG (10.30, '085), JZ0DA (10.30) and VS90 (21.40, '100). Goff missed FO8AT but he was delighted with cards from VS9MA, YV0AB, BV1US, CR9AH and XE1PJ (ex-XU8XQ), his first XE in 12 years! A friend has a QSL from ZM6AS, whom Goff hasn't even heard yet. ZC3CB is reported on '065; JA0AQ has been heard at 07.00, '005 and VR1C should be on A1 and A3. B.R.S.20106 logged FO8AT, plus ZK1AK, VK0KT, UL7GP, VQ8AQ (16.30), FO8AO and MP4DAA (17.30). This one sounds as if he may be in Dohar, a sheikdom near Kuwait.

Forty Metres and Above

News remains scarce of l.f. doings, but the keen types still dig up good DX in the early hours. G3KAA QSO'd UA9OM (22.30) and G6ZG/A (Scroby Sands) on 40 while G3FPK, a supporter of the band, is up to 72C with recent additions like LU6ZI (Deception Is. 22.00, '009), PY, UF6, 4X4, UM8KAB and VPs '3BO and '3ER, while Norman heard VP3YG (22.00, '037) on phone. The VPs are usually around '037 kc/s, which is Cuban phone-ridden,

so G3FPK has written, suggesting '010 kc's as a better spot. For G3EYN, 7 Mc/s meant FF8AS (23.30), ZC4FL and VO1.

B.R.S.20317 logged PY2ANQ, UA9, UM8, UL7, UI8 and ZS5 and '6 on 40, between 18.00 to 19.00, in daylight. **B.R.S.2292** used 40 c.w. to log W6YMD, F2CB/FC, W0BLZ and VQ1XRO, whose "double" note fooled nobody! A good one on 7 Mc/s for **B.R.S.20106** was W4HBY/KS4 on phone and Norman even found DX on 80, where he heard PY6JD, TI2PZ, PY7NA and 4X4HK, while a -X2H-, at 03.30, was probably CX2HB.

G3IGW remarks on fantastic 7 Mc/s signal strengths from W, peaking around 04.00. In 45 minutes recently, he worked W1, '2, '3, '4, '8, '9 and heard '5 and '6, getting RST589 reports. Additionally, Mike heard OR4VN, LU, ZP and a weak KH6. VE2AZI, worked on c.w., is Frank, ex-G3GGN, a keen Top Band man, who plans to be on 1804 kc/s, listening also on that frequency. Mike should be able to work him up there as he now has a 550 ft. aerial on 160m, which at present collects S9 QRN and occasional G DX. Mike finds 160 conditions have never been so bad as in the last few months, but perhaps Winter will bring an improvement.

News from Far and Wide

Christmas Is. (VR3): Derek Cox (G3KHZ) finds himself in the maddening position of being in a rare DX spot and able to do nothing about it, as the security arrangements preclude—for some obscure reason—any amateur operation. We all hope that in due course, restrictions will be relaxed and he and the others there can operate as VR3s. Meanwhile Derek has been checking 14 Mc/s. Conditions are excellent—except to Europe—and Gs should send slowly and with pauses between characters when trying for that part of the world. Fast Morse runs together and "rings" and thus is impossible to copy. The best European signal heard was G3AAM (S7 to 8 at 07.45 G.M.T.). G4OI and G2DC were RST559 and G2DF, '3ATH, '6QB were just readable. Pacific DX rolls in, of course, and a mouth-watering selection includes FU8AE (14045 and '035, 08.30 and 20.00 G.M.T.; QSL direct to Louis Chaumont, Port Villa, New Hebrides). KB6BJ is active and calls Europe.

Look also for KM6BL, KM6AX (QSL Manager), KM6EVK, KS6AC, '6AG (Dotty, a YL), KW6CQ ('060) and KX6CD. ZK1AK is very active; ZK1AU and ZK1BS are also on, as is VK9RR (Port Moresby). VR2DA is the only VR heard to date and VR6TC is rumoured to have closed down.

Singapore: VS1HU has been given the call VS2MA. Now he intends to visit Malaya to give some much-needed VS2 c.w. QSOs from time to time.

U.S.A.: W4ESP (1110, E. 37 St., Savannah, Georgia), is trying to trace AP2F, worked on 28 Mc/s phone on September 23, 1958. The only clue is that his name is Geoff Weede. There was a later AP2F, but the original one is required for QSL purposes. Any information please to W4ESP.

Libya: G3FJU, ex-9K2AQ, is due to get a 5A5 call. All QSLs received for 9K2 will be answered. Incidentally, G3FJU has not been on the air for a year, so the "G3FJU" who uses 7 Mc/s and says he is in Rugby should send a s.a.e. to G3ISX when he will receive his QSLs—or something!

DL2UA is back in the U.K. and his new QTH is "Caldy Brow," 12 Keristal Ave., Chester.

Which ends another and more comprehensive *M.O.T.A.* Your commentator registers thanks for the response made by everyone. Apologies for the abrupt ending to last month's contribution, which was just one of those things. Material for the November issue by October 18 please, and for the December issue, please remember the usual Christmas postal delays. Best of luck to all, good hunting and 73.

Finland OH Award

THE Finnish Society (S.R.A.L.) are prepared to accept a certified check list for this award. Applications, together with the cards and check list, should be submitted to the Society's Honorary Certificates' Manager, Mr. G. E. Verrill, 10 Sea Horse Street, Gosport, Hants, who will return the cards within a few days. Full postage must be enclosed with the claim and check list.

The fee for the Award which will be sent from Finland is 5 I.R.Cs.

Frequency Predictions for November 1958

PREPARED BY J. DOUGLAS KAY (G3AAE)

BAND	NORTH AMERICA East Coast	NORTH AMERICA West Coast	CENTRAL AMERICA	SOUTH AMERICA	SOUTH AFRICA	NEAR EAST	MIDDLE EAST	FAR EAST	AUSTRALIA	ANT-ARCTICA
M.U.F.	43 Mc/s 1530	26.5 Mc/s 1745	43.5 Mc/s 1215	41 Mc/s 1530	40 Mc/s 1300	44.5 Mc/s 0945	42.5 Mc/s 0900	42 Mc/s 0900	29 Mc/s 0900 SP	25 Mc/s 1200
28 Mc/s	1145/1900	1745	1015/2100	0900/2100	0730/1830	0700/1715	0730/1615	0745/1300	0745/1215 SP	1200
21 Mc/s	1100/2000	1530/1915	0930/2300	0730/1200 1700/0000	0645/0900 1300/2215	0630/1930	0700/1800	1000/1600	0600/1700 SP 2030/2300 LP	1700/2030
14 Mc/s	0800/1200 2000/0600	0130/1530	2100/0930	2215/0900	1800/0430	0430/0900 1300/0200	1400/0000	1630/1900	0500/1000 LP 1400/2100 SP	2030/0830
7 Mc/s	2330/0730	0400	2300/0700	2330/0700	1900/0300	1630/0730	1630/0200	1900/2230	1530/1900 SP	2300/0700
3.5 Mc/s	0400	0400	0400	0200/0300	0000	2000/0200	1900/2300	2000	1730 SP	0330/0430

These predictions are based on information provided by the Engineer-in-Chief of the Post Office. All times are G.M.T.

Mobile Column

Transistorized Power Supplies— Woburn Abbey Rally

BY JOHN A. ROUSE (G2AHL/M) *

EFFICIENCY in a mobile installation is generally lowest in the power supply, the usual figure being in the region of 50 to 60 per cent, while the mechanical and electrical difficulties experienced with both vibrator supplies and rotary converters hardly need elaborating in *Mobile Column*. Fortunately, it seems likely that with the advent of the transistorized power supply, the problems at present encountered will be eliminated. However, the price of suitable commercially built units is such that they are not likely to be widely used by amateurs and there will therefore be considerable interest in the home construction of supplies of this type.

The theory of operation has been dealt with in a number of articles which have appeared in *CQ* and *QST*† and it is sufficient to say here that the transistors function as an electronic switch supplying a square wave output for subsequent rectification and smoothing. With the transistors at present available in this country the maximum output obtainable is in the region of 35 watts, sufficient for the operation of most amateur mobile stations.

It is an essential condition of the use of power transistors that adequate cooling should be available so that the maximum permissible junction temperature shall not be exceeded. Within the limitations imposed by the size of the necessary heat sinks, the equipment can be compact and light.

The circuit of a power supply which has been in use by G2BVN/M for a considerable time is shown in Fig. 1. It will deliver a steady output of approximately 30 watts for a drain of 3 amps from a 12 volt battery. The frequency of oscillation of the transistors is 2000 c/s but this will vary considerably according to the type of transformer employed. A small unit constructed on a "C" core will produce a frequency of between 1500 and 2500 c/s, but a transformer with the normal iron laminations will usually allow oscillation only at a very much lower frequency. The transformer at present in use is a German "Intermetall" type T10b with a maximum rating of 50 watts. Alternatively, an output transformer (20,000 ohms to 3 ohms) may be used to provide the feedback path, the secondary being connected to the transistor bases, with a 12 volt centre-tapped heater transformer supplying the collectors and the output windings. The power rating of the heater transformer should be sufficient to handle the d.c. output power.

The two resistors in the primary circuit are included to ensure that the transistors will commence to oscillate under load. The 50 μ F condenser is intended to limit the spikes which occur on the leading edge of the emitter-to-collector waveform which otherwise might destroy the transistors.

The heat sink recommended by the Newmarket Transistor Co. Ltd. for continuous operation at maximum ratings of the transistors specified is 50 sq. in. of 16 s.w.g. aluminium but it has been found that for amateur use where maximum current is only drawn for short periods this area can be reduced. The radiation properties of a heat sink may be improved by a coat of matt black paint on the external surface and this too, will allow a reduction to be made to the figure quoted earlier. It should be noted that both the heat sinks must be isolated from the main chassis.

It is strongly recommended that the fuses shown in the

input and output circuits should be incorporated as the transistors can easily be damaged or destroyed by accidental short circuits.

These notes on this important development in power supplies for amateur mobile equipment were contributed by R. F. Stevens (G2BVN).

Woburn Abbey Mobile Rally

More mobiles, better organization, brilliant weather and Woburn Abbey itself together conspired to make the Mobile Rally held on September 14, by kind permission of His Grace the Duke of Bedford, a great success. Fears that a second rally at the same place might not attract such a large attendance as last year were soon dispelled and by early afternoon it had become clear that the total attendance was going to exceed the 1957 figure by a handsome amount. Those present included old-timers such as G2NM, G2WJ, G6FO and G6MN and more recently licensed operators such as G3MQT, G3MYG and G3MWG who has run the successful North London mobile rallies this year. The most distant visitors were surely W5ARQ and W5EFI/8.

About 175 mobiles were counted in the two parks, more than 40 of them entering the competition for the best home-built mobile installation. The first prize, a pair of Goltop power transistors donated by the Newmarket Transistor Co. Ltd., was won by G8TL with equipment worthy of many a fixed station in the various facilities provided. The second prize went to G3GXZ for his ingenious remote controlled two metre transmitter-receiver mounted in the boot of the car. In third place was G6NW whose equipment for Top Band, 80 and 40 metres, included a continuously loaded whip. It is hoped to describe some of the other interesting equipment entered in a later *Mobile Column*.

Altogether the judges (G2BVN/M, G3HIR/M and G2AHL/M) visited 108 mobiles but they inspected only those with the special entry forms tucked under the windscreen wipers. While the standard of workmanship in the building of home-made gear is undoubtedly high, the judges had to rule out many on the grounds of safety. If all had met the rigid requirements desirable on such grounds, the judges task would have been very hard indeed. In far too many cases it appeared likely that unsecured equipment would present a considerable hazard in the event of an emergency stop, skidding or even running over a bumpy road at speed. It is considered that all mobile equipment should be rigidly fixed in position in such a way that normal driving of the vehicle will not be impeded. For operation on the move, particular care should be paid to the arrange-

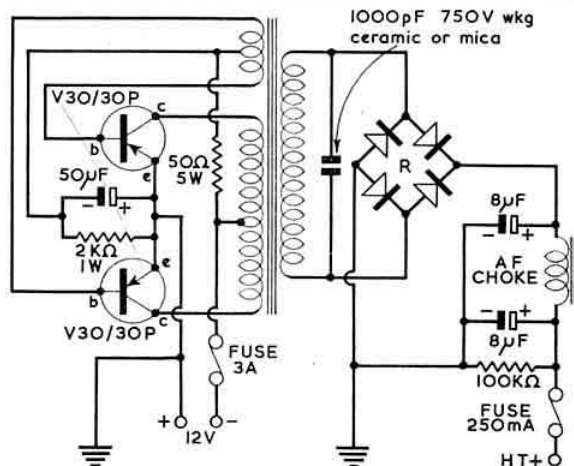


Fig. 1. Circuit diagram of a transistorized power supply for mobile use. The rectifier R is a bridge selenium unit of suitable rating.

* Assistant Editor, R.S.G.B. Bulletin

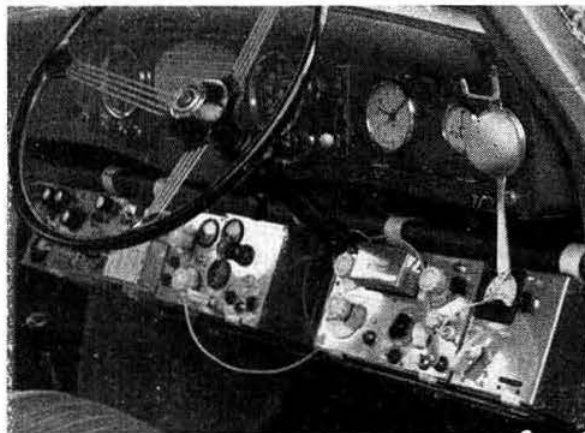
† *CQ*, September 1957, May and June 1958; *QST*, April and June 1958.

ments for send-receive switching. The chest type of microphone appears to be the safest at the moment but only one or two were seen at the Rally.

Safety plays so important a part in all motoring these days, and even more so in amateur mobile work, that it is intended to return to the subject at a later date. Meanwhile, it is hoped that all members will ensure that their installations are as safe as good engineering can make them.

The co-operation of the Newmarket Transistor Co. Ltd., Proops Bros. Ltd., Relda Radio Ltd. and the Mini-mitter Co. Ltd., in providing prizes is gratefully acknowledged.

A demonstration of Amateur Television was arranged by G2DUS/T and G3HTW over a path of about 28 miles, believed to be one of the longest range tests so far made. The equipment included a 64 element portable stack.



A view inside GSTL/M's Wolseley "1500" showing the mobile installation with which he won first prize at the Woburn Abbey Mobile Rally on September 14. Operation is possible on all bands from 1.8 to 28 Mc/s. The transmitter uses a 6CH6, 5763 and 5M/254. A converter employing a 6BJ6 and 6U8 is used for the higher frequency bands and feeds into the main receiver. Full monitoring and frequency checking equipment is built in.

The Rally control stations, G3IIR/P (Top Band), G4OL/P (80 metres) and G3FZL/P (two metres), were kept busy throughout the day and the final close-down had to be put back several times. At last, however, the gathering dusk forced the operators to pull the big switch so that the working party could pack up in the little light which remained.

Organization of a rally of this type is a combined operation involving so many individual amateurs that a complete list is impossible but the organizing group expresses its thanks to the control stations and their operators, members of the Crystal Palace Radio Society and Norwood and South London R.S.G.B. Group who made up the main working party, G3CGD who supplied the special Rally badges and, by no means least, all those who by their attendance set the seal of success on all the efforts made to arrange an enjoyable event.

* * *

With the summer nearly over, *Mobile Column* will be appearing less frequently but contributions of all kinds will be all the more welcome.

The British Amateur Television Club

MR. DONALD S. REID, M.A., of 27 Rose Valley, Brentwood, Essex, has succeeded Mr. D. W. E. Wheeler in the office of Honorary Secretary of the British Amateur Television Club.

London Members' Luncheon Club

THE newly appointed General Secretary of the French National Society, R.E.F. (M. Francois Dieguilly, F8JQ/F3HE) and his mother, were among the many overseas guests present at the meeting of the London Members' Luncheon Club held on September 19, 1958. Other visitors from abroad included Miss Zofia Mazorkenwicz, SP5YL (QSL Manager for PZK, Poland), Mr. K. Stomczynski, SP5HS, Mr. Alex Brown, VE6GS (who recently represented Canada at the Empire Games), Capt. Jordan, W3FIU (making a welcome return visit), M. Jean Jaquenaud, 3A2BF, and his wife from Monaco.

The Chair was taken by Mr. Stanley Vanstone, G2AYC, who had the support of more than 25 regular members of the Club and their ladies.

The Club is due to meet again on October 17, 1958, at the Bedford Corner Hotel, Tottenham Court Road, London, W.C.1. Reservations should be made prior to that date to Mr. Frank Fletcher G2FUX (Ruislip 2763) or to Miss May Gadsden (HOL. 7373).

Radio Amateurs' Examination—Courses Offered in Birmingham

COURSES of instruction in preparation for the Radio Amateurs' Examination are being offered at the Central Evening Institute of Further Education, Bristol Street Schools, Bristol Street, Birmingham. The instructor is Mr. M. Brett, G3HBE, and the classes are held at St. Thomas' School, Bath Row, on Mondays and Wednesdays.

A beginner's course for the R.A.E. is being offered by the Moseley and Kings Heath Institute of Further Education at Brandwood Secondary Modern School, Sunderton Road, Brandwood End, Birmingham, on Wednesday evenings. The instructor is Mr. W. V. Shepard, B.R.S.19176. On Monday evenings, at the same centre, Mr. Shepard lectures on Radio and Television (2nd year standard).

R.S.G.B.

RADIO HOBBIES EXHIBITION

ROYAL HORTICULTURAL SOCIETY'S OLD HALL, VINCENT SQUARE, LONDON, S.W.1

November 26-29, 1958

The Exhibition Committee invites members all over the country to offer for display equipment of every type from gadgets to complete transmitters and receivers. A Silver Plaque will again be presented in connection with the Constructors' Competition. Prizes value £10 and £5 will be awarded in connection with equipment exhibited by members living outside Region 7. **Offers only in the first instance should reach R.S.G.B. Headquarters by October 30, 1958.** Offers to do stand duty at the Exhibition should be sent direct to G. W. Norris (G3IC), 134 Meads Lane, Ilford, Essex.

Enquiries regarding stand space should be addressed to the Exhibition Organizer, P. A. Thorogood (G4KD), 35 Gibbs Green, Edgware, Middlesex.

National Field Day 1958—Results

N.F.D. Shield	Gravesend Radio Society (G6VC/P and G3IEW/P)	1651 points
Runners-up	Stamford and District Group (G3ARS/P and G3FUR/P)	1432 points
Scottish N.F.D. Trophy	Edinburgh and Lothians Group (GM8FM/P and GM3UM/P)	789 points
Bristol Trophy	Coventry Group (G5PP/P)	657 points
Best 1-8 Mc/s	Oxford and District Radio Society (G8PX/P)	242 points
Best 3-5 Mc/s	Stamford and District Group (G3FUR/P)	371 points
Best 7 Mc/s	Gravesend Radio Society (G3IEW/P)	424 points
Best 14 Mc/s	Gravesend Radio Society (G3IEW/P)	395 points
Best 21 Mc/s	Gravesend Radio Society (G6VC/P)	414 points
Best 28 Mc/s	Slough Group (G6CJ/P)	35 points

Overseas station contributing most points to competing stations: DL2YY/P

British Isles station contributing most points to competing stations: G2DC

HAVING doubtless taken careful note of the spectacular achievement on 21 Mc/s of the Stamford group in 1957 N.F.D., the Gravesend crew more than doubled their 1957 score on this band to win the 1958 contest. The wide margins separating the first three stations make this the most outstanding N.F.D. win for many years. Stamford & District were unable to repeat their previous success on 21 Mc/s, on which band they found the going very tough this year, but they nevertheless increased their overall score sufficiently to move from fifth to second place. The weather caused difficulties to many groups, and varied from sharp heavy showers on the Saturday in the South to almost continuous rain and thunderstorms in the North. High winds complicated matters in many places.

Thirteen groups entered this year under the names of their local affiliated societies rather than as R.S.G.B. groups as previously, and six other societies entered for the first time. The total number of entrants was thus slightly higher than last year and shows a welcome reversal of the decline of the previous few years. One group had to drop out at the last moment for lack of support, and one or two others were active but failed to send in their logs.

The 28 Mc/s Band again produced very few contacts, but ZC4IP was an outstanding signal when active. LU, PY and ZD7 were also worked. 21 Mc/s was open all day on Sunday, and DX reported included FK8, JA, JT1, PY, ST2, VE8, VK, VP6-7-9, VQ2, VS1-6-9, ZL, 9K2 and all W districts

National Field Day 1958

BAND LEADERS

1-8 Mc/s

1. Oxford & District Radio Society, G8PX/P 228
2. Medway Group G2ZP/P 218
3. Wirral Group G2AMV/P 211
4. Stourbridge & District Group ... G8GF/P 208
5. Liverpool & District Amateur Radio Society G8DI/P 207

3-5 Mc/s

1. Stamford & District Group G3FUR/P 371
2. Stourbridge & District Group ... G3BMY/P 312
3. Chelmsford Group G2HPF/P 298
4. Mitcham Group G3JJG/P 295
5. Southgate & District Group G5FA/P 293

7 Mc/s

1. Gravesend Radio Society G3IEW/P 424
2. Reigate and Redhill Group G2AJS/P 415
3. Norwich & District Radio Club ... G3IVH/P 405
4. Cambridge Group G8PB/P 395
5. Medway Group G2ZP/P 374

14 Mc/s

1. Gravesend Radio Society G3IEW/P 395
2. Stamford & District Group G3ARS/P 348
3. Ballymena Group G13FJA/P 316
4. Stourbridge & District Group ... G3BMY/P 311
5. Edgware and Hendon Group G2IM/P 304

21 Mc/s

1. Gravesend Radio Society G6VC/P 414
2. Stamford & District Group G3FUR/P 297
3. Brighton Group G3YY/P 207
4. Bristol Group G2IK/P 205
5. Port Talbot Group GW2AVV/P 187

28 Mc/s

1. Slough Group G6CJ/P 35
2. Edgware & Hendon Group G2IM/P 28
3. Mitcham Group G3JJG/P 27
4. Southgate & District Group ... G3MBM/P 27
5. Norwood & South London Group G3IIR/P 15



Erecting the quad for G3BMY/P, operated by Stourbridge and District. From left to right: G3KLT, G3HGI and two B.R.S. members, Neville Heathcote and Ken Davies.

NATIONAL FIELD DAY 1958 — COMPLETE RESULTS

Posn.	Group or Club	Call-sign(s)	1-8 Mc/s	3-5 Mc/s	7 Mc/s	14 Mc/s	21 Mc/s	28 Mc/s	Total Score	Posn.	Group or Club	Call-sign(s)	1-8 Mc/s	3-5 Mc/s	7 Mc/s	14 Mc/s	21 Mc/s	28 Mc/s	Total Score
1	Gravesend Radio Society ...	G6VC * G3IEW	142 *	262 *	424	395	414 *	14	1651	49	Belfast Group ...	G12DZG * G13JXS	0 *	161	203 *	203	57 *	8	632
2	Stamford & District Group ...	G3ARS * G3FUR	185 *	371	225 *	348 *	297	6	1432	50	West Hartlepool Group ...	G3AWL * G3CHJ	120 *	273	207 *	26	4 *	0	630
3	Stourbridge & District Group ...	G8GF * G3BMY	208 *	312	273 *	311	131 *	0	1235	51	Ilford Group ...	G3LRE * G3HIW	65 *	218 *	253	77	—	—	613
4	Port Talbot Group ...	GW2FRB * GW2AVV	169 *	239	316 *	301	187	8 *	1220	52	Cardiff Group ...	GW2CAS * GW5BI	109 *	259	88 *	147	0 *	0	603
5	Cambridge Group ...	G8PB * G5DQ	138 *	254	395 *	276	141 *	6	1210	53	Chingford Group ...	G8JM	—	251	241	—	110	—	602
6	Weston-super-Mare Group ...	G5TN * G3KX	206 *	232	307 *	266	184 *	0	1195	54	Boston Group ...	G6GH	150	224	219	—	—	—	593
7	Slough Group ...	G6NA * G6CJ	74 *	268 *	371	260	172 *	35	1180	55	Torbay Amateur Radio Society ...	G3GDW * G4RJ	187 *	38	266 *	3	96	0 *	590
8	Bristol Group ...	G2IK * G6GN	177 *	281	293 *	211	205 *	12	1179	56	Rhyl & Prestatyn Group ...	GW3JGA * GW3FPF	43 *	238 *	242	50	0	0 *	573
9	Edgware & Hendon Group ...	G5FG * G2IM	136 *	261	236 *	304	182 *	28	1147	57	Exeter Group ...	G2FP * G3ID	56 *	183	183 *	139	0 *	2	563
10	Norwich & District Radio Club	G2YU * G3IVH	130 *	242	405	172 *	176 *	0	1125	58	Ballymena Group ...	G13DZE * G13FJA	0 *	118 *	124 *	316	0	0	558
11	Medway Group ...	G2ZP * G2BP	218 *	276	374 *	123	105 *	3	1099	59	Gloucester Group ...	G3MA	—	244	223	75	—	—	542
12	Pontefract & Castleford Group	G3ESP * G3US	170 *	278	270 *	207	161 *	0	1086	60	Guildford & Woking Group ...	G3ARM	128	212	—	202	—	—	542
13	Mitcham Group ...	G3JIG * G3CAS	186 *	295 *	339	80	120	27 *	1047	61	Southampton Group ...	G5LR	106	181	215	—	—	—	502
14	Norwood & South London Group	G3IIR * G8GP	204 *	287 *	341	117	54	15 *	1018	62	Retford & Workop Group ...	G3AUZ * G3KPU	114 *	157	208	22 *	0	0 *	501
15	East Molesey Group ...	G5LC * G8SM	201 *	284 *	305	118	87	13 *	1008	63	Acton, Brentford & Chiswick Group ...	G5LQ * G3IU	157 *	211 *	70	61 *	0	0	499
16	Croydon Group ...	G3BFP * G3KXT	169 *	274	219 *	214	102 *	14	992	64	Leicester Group ...	G3LRS * G3AWM	146 *	122	222	1 *	—	—	491
17	Reigate & Redhill Group ...	G3JDN * G2AJS	160 *	168 *	415	126	82 *	0	951	65	Enfield & District Group ...	G2NR * G3FD	116 *	61 *	272	0	12 *	0	461
18	Sutton & Cheam Radio Society ...	G4DH * G8DF	193 *	184 *	270 *	170	108	0	925	66	Chester Group ...	G3HEU * G3ATZ	95 *	163	175 *	26	0 *	0	459
19	Oxford & District Amateur Radio Society ...	G8PX * G2DU	228 *	265 *	220	108	64	5 *	890	67	Bailleul Radio Society ...	G3IHH	198	167	92	—	—	—	457
20	Great Yarmouth, and Lowestoft & Beccles Groups ...	G2UK * G3GIR	172 *	223	333	91 *	71 *	0	890	68	Stockport Radio Society ...	G3FYE	25	198	217	—	—	—	440
21	Cheltenham Group ...	G3CGD * G3YZ	169 *	216 *	235 *	126	144	0	890	69	Harlow & District Group ...	G3ERN * G6UT	65 *	167 *	181 *	18	—	—	431
22	Liverpool & District Amateur Radio Society ...	G8DI * G6YQ	207 *	220 *	198	205	51	—	881	70	High Wycombe Group ...	G2RL	175	140	—	—	109	—	424
23	Brighton Group ...	G2FAD * G3YY	170 *	110 *	173 *	203	207	—	863	71	Ravensbourne Amateur Radio Club ...	G3HEV	—	182	223	16	—	—	421
24	Scunthorpe Group ...	G3KSG * G3CCH	156 *	272	345 *	66	22 *	0	861	72	Aberdeen Group ...	GM3HTL GM3FRZ	68 *	29 *	72 *	148	83	10	410
25	Chelmsford Group ...	G3ABB * G2HPF	145 *	298	255 *	91	60 *	7	856	73	Stevenage & District Group ...	G3FAU	89	110	199	—	—	—	398
26	Scarborough Group ...	G8KU * G2YS	139 *	245	271 *	96	99 *	0	850	74	Amateur Radio Club, 21st (NM) Corps Signal Regiment (TA) ...	G3LTL	100 *	260	—	37	—	—	397
27	Sheffield Group ...	G8NN * G5TO	143 *	216 *	321	95	63 *	0	838	75	Newark Group ...	G3ELJ	—	163	227	—	—	—	390
28	Grimsby Amateur Radio Society	G4XC * G2JB	173 *	211	192 *	168	91 *	0	835	76	Shefford & Bedford Group ...	G2DPQ	—	227	151	4	—	—	382
29	Coulsdon & District Group ...	G2DN * G2KU	167 *	219	211 *	104	128 *	0 *	829	77	Kingston & District Amateur Radio Society ...	G3KIN * G3DWW	45 *	90 *	163 *	60	16	—	374
30	Lincoln Group ...	G4BU * G3EBH	186 *	229 *	252	51	107	0	825	78	Barnet & District Group ...	G4AH	—	106	255	6	—	—	367
31	Danbury Group ...	G3IIS * G3VI	201 *	279 *	246	81 *	10	0	817	79	Dundee Group ...	GM3EUV * GM4HR	72 *	163	119 *	0 *	0	0	354
32	Southgate & District Group ...	G3MBM * G5FA	82 *	293	238 *	112	59	27 *	811	80	Ainsdale Radio Club ...	G2DQX	142	70	126	—	—	—	338
33	Bury & Rossendale Group ...	G2GA * G3KMM	141 *	256 *	292	117	0	0 *	806	81	Plymouth Group ...	G3GRA * G3JYB	12 *	117	117 *	91	0	—	337
34	Edinburgh & Lothians Group ...	GM8FM * GM3UM	97 *	111 *	294	149	126 *	12	789	82	Welwyn Garden City Group ...	G5UM	—	182	138	—	14	—	334
35	Wirral Group ...	G2AMV * G8BM	211 *	204	285 *	74	4	0 *	778	83	Finsbury Park Group ...	G3RX	169	162	—	—	—	—	331
36	Hull Group ...	G2CPS * G3EFR	174 *	208	229 *	121	0 *	0	732	84	Dunfermline Group ...	GM3EGU	—	—	247	53	—	—	300
37	Glasgow Group ...	GM6IS * GM3CSM	201 *	21	196 *	262	48 *	0	728	85	North Kent Radio Society ...	G3ENT	130	79	79	—	—	—	288
38	Rotherham Group ...	G2LG * G4BD	92 *	235	201	182 *	15	0 *	725	86	Bradford Group ...	G3KSS	10	112	158	—	—	—	280
39	Stroud Group ...	G5HC * G5ZK	174 *	210 *	216	116	8	—	724	87	Preston Group ...	G3LBU * G3DWQ	22 *	165	65	15 *	—	—	267
40	Thanet Area Group ...	G2JF * G2IC	182 *	236 *	291	8	2	0 *	719	88	Ealing Group ...	G5SX	132	132	—	—	—	—	264
41	East Ham Group ...	G2ZZ * G4CM	156 *	220 *	281	59	0	0 *	716	89	Cannock Group ...	G3ABG	—	—	193	62	0	—	255
42	South Shields & District Amateur Radio Club ...	G3ELP * G3LKZ	145 *	137	283 *	112	26	0 *	703	90	West Kent Amateur Radio Society	G3MDR	—	165	38	9	—	—	212
43	Bath Group ...	G6UR * G2ZR	148 *	218	125 *	108	80 *	9	688	91	Pontypool Group ...	GW3JBH * GW3LDC	—	79 *	49 *	62	—	—	190
44	Blackpool Group ...	G8GG * G5ND	193 *	210	114 *	123	29 *	8	677	92	Newbury & District Amateur Radio Society ...	G3IG	79	78	—	0	—	—	157
45	South Birmingham Group ...	G3JAO * G3ITH	125 *	279	217 *	45	0 *	0	666	93	Reading & District Group ...	G5TP * G5HZ	15 *	16 *	0 *	18	72	11	132
46	Coventry Group ...	G5PP	205	253	199	—	—	—	657	94	South Manchester Radio Club ...	G3FVA	—	15	115	0	—	—	130
47	Portsmouth & District Group ...	G6NZ * G6WS	112 *	187 *	217	44 *	80	2	642										
48	Derby & District Amateur Radio Society ...	G3ERD * G3EEO	193 *	217	224 *	0	0	0 *	634										
	Derby S.W. Experimental Society																		

* Indicates grouping of bands.



G3JMY and G3CTN operating Bristol Groups's G2IK/P.
(Photo by "Western Daily Press" and "Bristol Observer.")

except 7. 14 Mc/s produced contacts with KL7, KV4, LU, MP4, PY, ST2, TF3, VE5-7-8, VK, VP9, VQ6, VS1, ZL, 5A2, 9K2 and all W districts.

Activity on the three lower frequencies was high, and the large number of continental portables active contributed to some very good scoring rates during the night.

Leading Stations

Gravesend Radio Society operated from Woodhill Farm, Meopham, Kent and made their 1,651 points from 539 contacts. The stations were operated by G6VC, G3JLB and G3LWS (G6VC/P), and G3IEW, G6BQ and G3LWS (G3IEW/P). G6VC/P used a EF91—EF91—6AG7—6V6—807 transmitter, HRO receiver with c.c. converter and 260 ft. centre-fed zepp aerial. G3IEW/P used a 6AM6—6AM6—6AG7—6V6—6V6—807 transmitter, AR88 receiver, and an aerial system consisting of three 33 ft. wires arranged at 120°, fed with three-wire open line with provision for switching to any two. Power for the stations was supplied by a petrol generator. Stamford and District group have jumped from fifth place last year to second this year, with considerably improved results on 3.5 and 14 Mc/s which more than compensated for their lower score on 21 Mc/s. Their 1,432 points were made from 470 contacts. G3FUR/P was operated by G3FUR, G3HES and G3KWC, using a transmitter with a QV04/7 p.a., CR100 receiver with c.c. converter, 66 ft. and 132 ft. centre-fed and two half-waves-in-phase aerials. G3ARS/P used a v.f.o.—b.a.—p.a. transmitter, BC342 receiver, 270 ft. zepp, 66 ft. centre-fed and "lazy-H" aerials, and was operated by G3ARS, G3JBQ and G3KHZ. Power for both stations was provided by a petrol generator.

Coventry group are the winners of the Bristol trophy as the leading single-station entry with 657 points from 251 contacts. The station was operated by G5PP, G6TD and G2FTK under the call-sign G5PP/P, and used a Z77—Z77—5763—807 transmitter, BC453 receiver preceded by a converter using two r.f. stages and a crystal mixer, and dipole aerials. Once again power was supplied by a petrol generator. Edinburgh and Lothians group are the winners of the Scottish N.F.D. trophy with 789 points, a lead of 61 points over their nearest rivals, Glasgow. Last year's Bristol trophy

winners, Port Talbot, entered two stations and did very well to achieve fourth position in the overall table.

Equipment

A survey of the equipment used shows that the 807 and its various equivalents is still overwhelmingly the most popular valve; no less than 91 transmitters used this type, followed by 11 transmitters using the 6146 or equivalents. The remaining transmitters used a wide variety of types, including QV04/7, 5763, 6AQ5, 6L6, TT11, 6V6, 6BW6, QV03/20 and 832. The HRO still holds pride of place amongst the receivers, 51 of them being used, many with Q-5's or converters; other receivers included 32 Eddystones of various types, 17 AR88s and, in much smaller numbers, CR100s, SX28s, BC342s, BC348s, BC312s, R1475s; there was one straight receiver and three home-built superhets, one of which used all battery valves. Petrol or diesel generators were used by 34 groups and three others used small charging generators for their batteries. It appears that considerable operating time was lost at quite a number of stations due to generator breakdowns, probably caused in part to prevailing weather conditions! Most of the other stations were operated from batteries using either vibrator packs or rotary converters.

BRISTOL TROPHY

Single Station Leaders

1. Coventry Group.....	G5PP/P.....	657
2. Chingford Group.....	G8JM/P.....	602
3. Boston Group.....	G6GH/P.....	593
4. Gloucester Group.....	G3MA/P.....	542
Guildford & Woking Group.....	G3ARM/P.....	542

Overseas Stations

The usual high level of European activity included portables in ON4, DL, OH, EI and HB, dominated once again by the beautiful signal and superb operating of HB4FB/P. Activity by United States stations was high, but Canadian activity seemed rather lower this year. Commonwealth portables included ZB1DZ/P, VP9AK/P, VE2LI/2 and ZC4CK/P (unfortunately the latter's check log did not arrive until after judging had been completed), and constant activity by a larger number of ZC4 stations than usual contributed considerably to the high scores on 21 and 14 Mc/s.

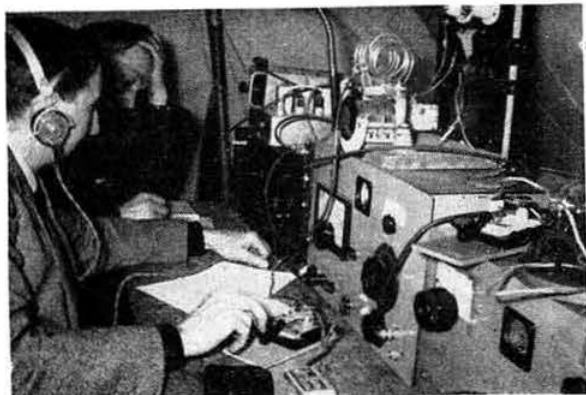
Operating

The general standard of operating was good, and it was noted that comment made many times previously on the



G2KU/P was one of Coulsdon and Purley Group's stations. In this picture, G2KU himself is on the key while G3FTQ attends to the check log.

(Photo by G3IIE.)



G6UR/P was one of Bath Group's stations in N.F.D. In this picture, G6UR himself is operating.

(Photo by G3FIH.)

incorrect use of BK procedure has at last sunk in. G2DC commented on the number of stations who wasted time by unnecessary repetition of reports and serial numbers when they had already been given good signal reports by the stations with whom they were in contact. A good deal of confusion over correct identification of continental portable stations was evident, and it is hoped to publish a guide to the suffixes used by the various countries before the next N.F.D. takes place, based on the latest available information; in any case many scores have been adjusted (both ways!) by the Contests Committee to take doubtful or uncertain claims into account.

DX Prefixes Worked by N.F.D. Portables (frequencies in brackets)

G.M.T. JUNE 7, 1958

- 17.00 (14) ZBI, ZC4. (21) ZBI, ZC4, WI, 2, 4, 6, 8, 0.
 18.00 (14) VQ6, VSI, ZBI, ZC4, ZL, UA9, W2, 8. (21) VQ2, PY, UR2, W2, 6.
 19.00 (14) VE8, VSI, ZBI, ZC4, ST2, W2, 3, 9. (21) ZC4, ET2, PY, UR2, W2, 4.
 20.00 (14) VE2, 3, ZC4, 9K2, ST2, WI, 2, 3, 4, 5, 8, 9, 0. (21) PY, WI, 2, 4, 0, (28) LU.
 21.00 (14) MP4, VEI, 2, 3, VK, ZC4, PY, ST2, WI, 2, 3, 4, 8, 9, 0. (21) W2, 4, 0.
 22.00 (14) VE2, 3, ZC4, ST2, WI, 2, 3, 4, 8, 9. (21) ZC4, W2, 4, 8, 0.
 23.00 (14) VE2, ZC4, KV4, PY, WI, 2, 4, 8, 9.
 00.00 (7) W3. (14) VE2, 3, ZC4, LU, WI, 2, 3, 4, 0.

JUNE 8, 1958

- 01.00 (7) WI, 2, 3, 4. (14) VE2, ZC4, KP4, W2, 3, 4.
 02.00 (7) VE3, PY, WI, 2, 3. (14) ZC4, UA9, W2, 3, 4.
 03.00 (7) VEI, 3, WI, 2, 3, 4, 6, 8. (14) LU, UA9, W3, 4, 6, 8, 9, 0.
 04.00 (7) WI, 2, 3, 8. (14) VE5, 8, ZC4, ZL, W4, 6, 8, 9, 0.
 05.00 (7) WI, 4. (14) VE7, 8, VK, VP9, ZL, W3, 4, 6, 7, 8, 9, 0. (21) JAI.
 06.00 (14) VE7, 8, VK, KL7, ST2, WI, 4, 5, 6, 7, 0. (21) VK, VS9, ZBI, JAI, UA9.
 07.00 (14) VK, VP9, ZBI, KL7, W5, 6. (21) VS9, ZC4, ZL, JTI, ST2, UA9.
 08.00 (14) KL7, WI, 4, 5. (21) ZC4, 9K2, JTI, ST2.
 09.00 (14) WI, 2, 5. (21) VK9, ZC4, ZL. (28) ZC4.
 10.00 (14) ZBI, 5A2. (21) VK, VS9, ZC4, ZL, FK8.
 11.00 (14) ZB2. (21) VK, VS9, VEI, 2, 3, ZC4, ZL, W2, 3, (28) ZC4.
 12.00 (21) VE3, 8, ZC4, WI, 2, 3, 4, 9, 0. (28) ZC4, ZD7, PY.
 13.00 (14) TF3, W6. (21) VEI, 3, VP9, ZBI, ZC4, JAI, JTI, WI, 2, 3, 4, 5, 8, 9.
 14.00 (14) VEI, ZBI, TF3, W6. (21) VEI, 2, 3, 8, VO, VP9, VSI, ZC4, ST2, WI, 2, 3, 4, 8, 9.
 15.00 (14) VE3, ZBI, W2. (21) VE2, VSI, ZBI, ZC4, WI, 2, 3, 6, 8, 9, 0.
 16.00 (14) ZC4, TF3, W2, 6. (21) VE2, 8, VP6, 7, VQ2, VSI, ZBI, ZC4, UA9, WI, 2, 8, 9, 0.

(All times shown are to the nearest hour.)

Explanations

Queries were raised by a few groups on certain points concerning the rules, the reasons for which are not always obvious. The substitution of serial numbers for personal letter groups has speeded up the checking of the contest very considerably and relieved the committee of much hard work at a time when it is usually depleted by members being on holiday—it also means earlier availability of the leading scores.

It is not necessary for individual operators to sign the log sheets, but only the cover sheets; the call-signs of the operators making contacts are required to be shown in case it should become necessary for any reason to delete contacts made by a particular operator, e.g. should it be found that he is not a member of the Society.

For several years the full list of competing stations has been omitted from the BULLETIN as this was very costly in terms of space; details of local activity in any area can be supplied to any member upon inquiry to Headquarters.

Some groups have objected to the use by others of certain types of aerials, but cubical quads and ground-planes can be made within the restrictions of the rule with a certain amount of ingenuity, and the committee does not consider that these in any way infringe the spirit of the contest.

In the same way, the committee does not object to the use of petrol or diesel generators, users of which take the risk of long periods off the air in the event of faults, and objections to small generators on the grounds of portability could probably be matched by objections on the same grounds to the use of certain types of receiver, and even some of the large accumulators used!



G3LOV trying to push the score above 200 contacts at Mitcham Group's G3JJG/P during the last few minutes of N.F.D.1958. The receiver is an ex-R.A.F. R1475.

(Photo by G3HQX.)



At G3EBH/P, one of the Lincoln stations, a modified LG300 transmitter was used with an 832 running 10 watts input in the p.a. (Photo by Lincolnshire Echo).

Judges Comments

Once again it has unfortunately proved necessary to deduct a significant number of points from one leading entry due to non-membership of the Society of one of the operators—the Oxford group are fortunate in having had a sufficiently large lead on 1.8 Mc/s to retain their position at the top in spite of this deduction.

The standard of the logs this year was reasonably good, with fewer over-optimistic claims than usual, and legibility was rather better than in the past few years; however, a number of points were lost through errors in copying from original, possibly indistinct, logs or in transcribing oral instructions from operators to log-keepers.

It is evident from comments made by a few groups, supported by the slack periods in their logs, that they are not making the best use of the freedom of allocation of bands between their stations, and a study of the results achieved by other groups using different allocations may well prove fruitful in future contests. Similarly, it was noticed that some stations had given little thought to planning what times should produce the best results on each band; this of course requires that at least one local operator should be active and have a good idea of prevailing conditions on the DX bands for the few days before N.F.D. takes place. Such mistakes as operating all night on 3.5 and 7 Mc/s and then expecting to find a high level of activity on 1.8 Mc/s during daylight on Sunday would easily be avoided. The table of DX worked this year can only be taken as a rough guide, as conditions may well be very different next June, but comparison with what you were working at any particular time may be both interesting and instructive.

Lastly, a plea from the Contests Committee for more comment on your experiences during the contest, your likes and dislikes about the rules, and any suggestions for future contests. These are a great help provided they are sent in with your logs (preferably in the space provided on the cover sheets). Without them, preparation of an interesting report is very difficult as it tends to be based on the personal experiences and opinions of those members of the committee who were active with their local groups. The "extracts from comments" included in past N.F.D. reports are omitted this year as almost all were in similar vein to those published previously, but we are sure members would be interested to learn more about the "cubicle quod" used by one group!

Check Logs

Check logs are gratefully acknowledged from the following stations who are listed, in each section, in the order of the number of points they contributed to the competing stations:

- (a) Overseas stations—DL2YY/P, LA6CF, OK2KFP, ST2AR, SM5CED.
- (b) British Isles stations—G2DC, G3GMK, G6UW/P, G3GXO, G2MI, G3NT/P, G6ZT and G5GH. (G6UW/P and G3NT/P operated as non-competing private stations).

Comment was made by G3NT/P that he found it difficult to work and give points to certain stations, who ignored him when he explained that he was not a competing station—rather a poor way to treat a station making a special effort to provide contacts.

London Lecture Meeting
Friday, November 14, 1958
"Radio Conditions in Antarctica"
By Major G. Watson, ex-VP8BP
(War Office)

Institution of Electrical Engineers
Savoy Place, Victoria Embankment

Buffet Tea 6 p.m.

Lecture 6.30 p.m.

The 49th State

A.R.R.L. have announced that as from the date that Alaska became the 49th State of the Union the written confirmations of two-way contacts will require 49 instead of 48 QSLs to make the grade for the Worked All States certificate. The Alaska card sent in must cover a contact made after the date Alaska achieved Statehood.

Present holders of W.A.S. certificates will not, just because of Alaska, be eligible for another certificate from their present location. If they move more than 25 miles they can qualify again.

Full details of the rules and regulations governing claims for W.A.S. are given in the R.S.G.B. publication *Certificates and Awards* (Price 1/3d. post free from Headquarters).

Californian Kilowatts

FOLLOWING an unannounced inspection of amateur stations by engineers of the Field Engineering and Monitoring Bureau of the Federal Communications Commission during the first weekend of the c.w. section of the 1958 A.R.R.L. International DX Competition, F.C.C. ordered the suspension for six months of the licences of two amateurs in the Los Angeles area, W6RW and W6BPD, for running inputs in excess of the 1 kW legal limit. Two others, W6BXL and W6VUP, were similarly apprehended and identically charged but they have appealed against their suspensions and asked for hearings.

Two of the four were members of the DX Century Club (they are no longer); all are members of A.R.R.L. and one is an Official Observer.

Wireless World Diary, 1959

THE 1959 edition of the ever-popular "Wireless World" Diary—bound in rexine—is now on sale at Headquarters, price 4/6 (by post 5/-).



GOOD REASON FOR CELEBRATION

Not so long ago, Shirley Dunn, daughter of R.A.E.N. Committee Chairman, Arthur Dunn, G2ACD, attended a meeting of the Scarborough Amateur Radio Club. During the evening Shirley met Peter Tipper, G3JBR, the then Chairman of the Club. Recently there was a happy gathering of amateurs and their ladies at the Hylands Hotel, Fife, when Arthur Dunn announced the engagement of Shirley and Peter. In this picture Arthur Dunn, G2ACD; Fred Olton, VP6FO (on a visit to Yorkshire); John Swinnerton, G2YS and Cliffe Metcalfe, G3DQ, toast Peter, G3JBR and Shirley.

FOUR METRES



AND DOWN

By F. G. LAMBETH (G2AIW)*

Much Activity from Poland on Two Metres—More Auroral Reports

A GOOD suggestion comes from G6SN regarding publicizing the activities of various portables and mobiles who are "out and about" during the year. The suggestion is that a monthly list of such stations should be run with dates, locations and frequencies, working times and any other special information. The lack of contacts on some portable journeys is not always due to conditions, which, incidentally, usually seem to be somewhat better than most people think—i.e. it is generally possible to hear stations at DX, if only they are on the air. No, the main reason is lack of activity, sometimes because the fixed stations just do not know that the portables are operating. Subject then, to getting the information (a postcard to G2AIW will do) such a list will be published from time to time.

Conditions on Two Metres

Although somewhat patchy, there have been some very bright moments during the period under review, both for tropospheric and auroral QSOs. This is evidenced by the fact that some of the less well-sited stations have been hearing and working stations in unexpected directions—in some cases for the first time.

Two Metre News from Poland

SP5FM reports that the first auroral contacts from Poland were made during the September opening when SP5AU had 16 contacts with SM4, 5, 6, 7 and DLs. SP3PD had 12 QSOs with SM5, 6, 7, OZ, DM, DL and heard LA 4 and an unidentified GM. The aurora was seen by SP5FM who was in Stettin as second operator at SP5FW for the European V.H.F. Contest.

SP3PD (Poznan) has probably the largest array in Europe—96 colinear dipoles. SP5AU (Warsaw) uses 24 elements and 500 watts. The SPs have an activity evening on Mondays which includes skeds with Scandinavia, Germany and Czechoslovakia. During the aurora, tropospheric conditions were also excellent: SP3PD worked DL1FF (510 km) with a better report than via the aurora and SP5AU heard DL3YBA (750 km).

During the European V.H.F. Contest SP5AU had the first SP/UB5 contact by working RB5KMX. On September 15, SP5AU worked SP6CL (QPR, 300 km) and SP3PD raised DL6EZA. With the probability of new aurorae, the SP stations open up an exciting new possibility on 2m and who knows, they may appear "tropo" also!

Aurora and Other Two Metre Reports

B.R.S.19162 (Dewsbury) found conditions rather better this time and was "in" on the first phase of the auroral opening of September 4. This was around 16.30 and activity was not very high, but OZ9AC, PA0TP, DL0IGY, and G3JGJ were heard. Another unusual event was the reception of GM2FHH and GM3HLH/A at 17.00 on August 31. This was only the third time GMs have been heard (tropo) in Dewsbury. Nothing was heard during the continental opening of September 11/12 but PE1PL was RS56/4 at

12.45 on the 17th, working G2FNW. In the evening GM3EGW was heard weakly on c.w. B.R.S.20133 (Melton Mowbray) has sent 50 check log reports to the various stations heard by him during the contest. A very carefully produced document. Conditions were noted as poor and weather not too good; this makes the total log all the more satisfactory. The overall month, however, was the best '20133 has had on 2m since starting in 1956. On phone, 99 stations have been logged—a record. The best of the month were the continentals and EI2W and GD3UB—all firsts. Nine countries have now been heard. '20133 adds to the plea for more station frequencies (to two decimal places if possible).

B.R.S.20162 (Selsdon) reporting after some lapse of time, found the last days of this period a distinct improvement on a long time previously; all signals, however, were subject to QSB, and the background level was rather higher than usual. B.R.S.20284 (Prestatyn, Flint) sends a report from August 1 onwards. During the morning September 7 GW3MDK/A operated from '20284's QTH and worked stations in England, Wales, and Northern Ireland. The receiver at '20284 is a 6BQ7A cascode r.f. 6J6—6J6—to a BC454. The aerial is a 6-over-6 slot at 120 ft. a.s.l. B.R.S.21476 (Penarth, Glam.) has a new converter in use on 2m with a c.c. oscillator, 28/30 Mc/s being tuned on the main receiver. The line up is 6J6 (half as a Squier overtone oscillator, the other as doubler), 6J6 (one section doubler, the other as mixer). The r.f. is an ECC85 cascode followed by a 6AK5. The i.f. amplifier is a 6AK5 and the output a 6C4 cathode follower. The converter has proved to be very satisfactory.

G5MR (Hythe, Kent) says that activity seemed encouragingly high on the Saturday morning before the European V.H.F. Contest, but owing to other commitments, time was limited and only six QSOs were possible. On the Sunday conditions were very poor and little was heard except the stations already worked the day before. The weekend of September 13/14 was unusually good to the east and south and good contacts were had with DL, F and ON stations. Before breakfast on the 14th, G3JWQ and G5YV were good signals and both were worked.

G3JGJ (Paignton) found things generally quiet but G2JM (North Petherton, Somerset) was heard and worked for the first time, at 18.15 on August 30. On the evening of September 4 G6XM was worked at 16.43 G.M.T. via the aurora (reports G6XM 57- and G3JGJ 58-). At 18.20 on the 5th, GC2FZC was worked as usual at 59+ both ways, but on the 6th signals were not so stable, with reports 59/0 and 58/0. The sked with G4DC has been almost 100 per cent, that with G6XM not so good at G3JGJ from the reception angle. G6XM has, however, heard G3JGJ many times. The sked with GW3MEY is nearly 100 per cent as also is that with GC2FZC. G3JGJ makes every night a c.w. night as far as calling CQ is concerned—a procedure which could well be widely copied. Some stations would be surprised how far their signals go sometimes, if they would only sign clearly on c.w. G3JGJ will be

* 21 Bridge Way, Whitton, Twickenham, Middlesex.

pleased to fix up a seven day per week sked with anyone.

G3KQF (Derby) found conditions quite reasonable, although fading has been troublesome. A very welcome QSO, for the tenth country was with **GM3EGW** (c.w.) Other notable ones were **G3KUH/P** (Westmorland) two or three times, **G6JY** (c.w.) in Northumberland and **F8MX**. **G3KQF** applauds the idea of a c.w. night, but wonders whether it will attract the types who "sit and listen, but only come on to work a new station or new county and then go QRT unless some real DX appears." Hm!

G3MEV (Maidenhead) started on 2m in January with five watts to a power doubler into a four-element Yagi at ten ft.! Rapid progress to a TT15 p.a. (20 watts) was made and 30 stations were worked with that gear. A four-over-four was recently erected with great enthusiasm, and since that time 2m has been a mass of signals from far and wide. **G8VZ** (Princes Risborough) just worked the sked QSOs until Field Day when activity was good but not conditions. The barometer rose to 1016 mb on September 3 and remained constant, bringing improved conditions from the 9th onward. During the sked of September 4 **G3KHA** told **G8VZ** of the aurora around 17.30/18.30. **G3KHA**'s signals at 18.45 were like watery DX signals on the h.f. bands. Quite a number of good stations were worked and heard from September 10 onward but **G8VZ** suffered from QRM from more powerful stations. Winter conditions, when only the stalwarts remain, should bring **G8VZ** into his own again. **F8MX** has been heard, but no other continentals. **G1**, **GW**, **GC** and the distant Northern English stations have been well heard.

G6SN (Birmingham) was recently in Westmorland (4m west of Kirkby Lonsdale) and naturally took the 12 watt mobile transmitter with collapsible four-element Yagi. The results were not very good—partly due to weather conditions but also possibly due to the fact that advance publicity could not be widely given. Only **G2NY** (twice) and **G2FCL** (Morecambe) were worked. The Monday was blank although **G5DW** (Bridgwater) was heard working **G2NY**. **G6SN**'s recent visit to Mortehoe (near Woolacombe, North Devon) was one of his reasons for the suggestion which heads this feature. Only after writing to several amateurs were QSOs possible, although later **GW3MFY**, **G3IRA** and **G3AOS/M** (local) were worked.

G3JNB (Surbiton) who reinforces **G3JR**'s plea for c.w. contests, hopes to be on 2m soon. He is already listening with a **G2IQ**-type converter to the **CR100**. **G2XV** (Cambridge) worked **HB1RG** via the aurora on September 4, the reports being 569 both ways.

G5YV (Leeds) heard **HB1RG** all through the aurora, and says that he was the only station, apart from one or two **GMs**, who never had a period of inaudibility. At about one hourly intervals, all **G** and European signals disappeared usually for about five minutes or so, with the exception above noted. **DL1FF** and **HB1RG** were the most consistent throughout. **DM2ABK** came back to a CQ at 02.30 B.S.T. and confirmed that it was the first **DM/G** QSO on 2m. Harold is apparently so accustomed to working stations like **OZ3M** and **SM7s** that he doesn't mention them in his letter, but they appear in his list of stations worked! Many Europeans were called without success and the impression was that they were ignoring stations previously worked and looking for new ones in the exceptional circumstances. **G5YV** retired at 03.15 B.S.T. and felt quite a bit jaded next day! He is in favour of some kind of yearly competition which would be likely to promote more activity every night and at other times than 7 to 8 p.m. and 10.30 p.m. to midnight. He considers that a small prize for the winner would be a big incentive. What do other members think?

G5MA (Great Bookham) started off the aurora on September 3 by hearing **GM2FHH** but no QSOs were made then (22.30/23.30 G.M.T.). On September 4, however,

the aurora started at 18.35 G.M.T. and went on until 02.15 G.M.T. on September 5. During this period, stations in Scotland, Northern Ireland, Northern England, Holland, and Germany were worked. Among the Scottish QSOs was that with **GM3BOC/A** (at Brora, in the rare county of Sutherland). The Dutch station worked was **PA0MZ** not **MX** as originally given. **GM3LAV** was heard but did not come back to calls. Many **Gs** and a **GW** station were heard, all with characteristic auroral notes. As to tropospheric news, **G5MA** followed the **G3KUH/P** expedition into Westmorland and Cumberland working him in the former county on August 31 and in the latter on September 1 and 4. **G6JY** (Newcastle) has been worked several times, and **G3IOE** once. **G2FO** (Durham) and **GW2HIY** (Anglesey) have again been welcome QSOs. The sked with **GD3UB** now represents more than 65 solid QSOs over the 265 mile path. A wonderful tropospheric opening occurred on September 12 when **GM3EGW** was worked solid phone, the best ever QSO between them. **GM3DDE** was also worked on phone and c.w. During the evening there was another solid QSO on c.w. with **GM3EGW**. As a result of all these openings three additional counties (Sutherland, Midlothian and Berwickshire) were added to the list, putting the total up to 70 worked. **GW8MQ** (Carmarthen) has been raised twice for another rare county!

G3JR (Barnes) was reported 579 by **G3DVK** (Rotherham) on August 31 (early hours). Around midday **F9JY** was called without success. On September 12 an S8 report was received from **G3JWQ** and from **G3MNQ** (Notts.) on the 10th. **G3JR** is quite sure that many of the continentals heard could have been worked if they had used c.w.

G5DW (Ashcott, Bridgwater) endorses **G3JR**'s idea for more c.w. operation. On a recent occasion such key pounding brought no results, whatever, although many weak unreadable phone signals were coming in from the north. As **G2NY** had reported the signal as S7 during the sked, the signal was definitely getting up there. One of the reasons is of course, that few people seem to tune above 145.5 Mc/s. The last period was very interesting, with conditions improving slowly after August 25, unstable but promising. **G5CP/M** was a roaring signal from Holyhead. By the month's end, the fading period was very slow. **G3KUH/P** was a solid phone from Westmorland and Cumberland, together with **G3IKV**, **G3IWI**, **G2NY**, etc. (the other regulars). These conditions largely held until September 13 on which date a solid QSO was made with **G15AJ**. This has been tried many times, so that the success was quite an occasion.

There is a wealth of activity in the south-west now: **G5DW** counted 13 recently all within 30 miles or so—all but one in the zone frequency!

G4LX (Newcastle) reports that the aurora was observed at 18.00 G.M.T. on September 3, but no QSOs resulted, and no signals were heard on 144 Mc/s. At 16.00 G.M.T. on September 4 aurora was effecting 2m. **G6XM** was heard, then **DL0IGY** with the beam north-east. **OZ7IGY** was inaudible. **G6XM** was worked at 16.30 G.M.T., **G3JGJ** and **G15AJ** at 18.40. **G5MA** was again heard via aurora at 21.26 G.M.T. but by 21.45 **G5YV**'s signal was being received only on the direct path.

G3JZG (Willenhall) says the aurora appeared at 21.38 G.M.T. on September 4 and was still in evidence at 00.30 on September 5. **GM3EGW**, **GM3BOC/A** and **GW3MFY** were worked, and **G15AJ**, **GM2FHH**, **3LAV**, **4HR**, **DL1FF**, **6QS** and **SM6BTT** heard. At 22.50 the aurora appeared to have shifted to the north-west but by 23.00 it was back to the north-east again. A tropospheric opening occurred on the evenings of September 12, 13 and 14. On the 12th **ON4BZ** and **PA0LQ** were heard. **ON4BZ** was heard again on the 13th whilst on the 14th **ON4DW** was heard weakly and **ON4BZ** worked.

News From North of the Border

GM3BOC/A (Brora, Sutherland) confirms that conditions were consistently fair to good, but except for the aurora of September 4/5 only two G stations were heard (G2NY and G5YV). Stations in the Edinburgh area were always audible if beaming north, at a distance of over 150 miles and of course GM2FHH was the local at 75 miles! There was a daily sked with G3CCH (Scunthorpe) but nothing was heard at either end. The aurora of September 4 was brilliantly visible (there were also visible signs the previous evening) and appeared to be overhead and moving south. G3BOC thinks he was a bit too far north to get full benefit of the auroral propagation, and signals were not heard until an hour after working became possible further south. The receiver broke down just before the European Contest and V.H.F. National Field Day—otherwise much more might have happened! G5MA and G3JZG were worked via the aurora; G3FZL, G3HBW and G3KEQ heard. On September 5, ON4BZ and G2NY were heard but no other auroral signals.

GM3KYI (Dundee) was portable near Forfar on Field Day and contacted GM4HR, GM3HLH/A, GM3KPD, GM3UM/P, GM3FGJ and GM3ENJ. G5YV was audible for about an hour towards the end of the contest. At Dundee, G15AJ has been heard at about S4 recently; G13GXP has also been heard.

GM3BDA has returned to the band after a long absence to work the two Dundee stations GM3HR and GM3KYI as "firsts." GM3BDA did this with a dipole, putting an S8/9 signal into Dundee.

GM3LAV (Edinburgh) says that during the contest conditions were by no means ideal. Only three Gs were worked during the whole period, only one other portable station (GM3KYI/P) being heard. On the evening of September 6, G3CCH, G3BNL, and G6JY were heard at reasonable strength but did not reply to calls. Sunday was very poor—the Gs heard were G2NY, G5YV and G6XM, and only one new station was contacted (GM3KYI/P).

GM6WL (Glasgow) says that a number of the V.H.F. Group have been busy moving to new QTHs and were perhaps unable to take advantage of some of the openings. GM3DIQ (Kilbarchan) "discovered" the start of the aurora on September 3 and contacted G3KPD during the half hour it was "alive" but had to go off and missed the Thursday opening, when GM6WL heard G2AIW signing with G2NY at 00.55 on the Friday morning. On September 1 GM6XW had a nice QSO with GM3BOC/A (Brora); GM3NG did likewise on September 5—good strong signals both ways. GM2CHN now has a much better QTH in South Glasgow. GM6VZ has also moved. GM6WL's sked with G15AJ continues to go well—on August 27 there were good "non-fading" conditions with the barometer at 29.4 in. G15AJ had an especially good phone QSO in his sked with G2NY.

GM3GUI (Frickheim, Angus) heard a station believed to be LA2Y during the aurora, as well as GM2FHH and GM3BOC/A. GM3FHH (Aberdeen) says there were some "queer goings on" during the aurora. During an auroral QSO with LA7AE the LA signals changed from 566 to 569, i.e. the aurora effect vanished and they carried on by tropospheric propagation. Also during the auroral part, LA7AE appeared to have two carriers, one 566 and the other 569 about five kc/s higher. It was observed about that time that the scatter area was extremely erratic, shifting rapidly from a beam heading of 40° to 330°. GM2FHH asks whether this LA7AE effect could be Doppler? There was definitely only one carrier when working by tropospheric propagation although the signals were slightly chirpy. Between 20.35 and 22.35 G.M.T. auroral signals were audible from 300° to 45° with G3HBW peaking 556 in two different positions—300° and 40°. By 23.00 G3HBW had settled down to 40° and this bearing stayed constant for almost

the whole of the opening. OZ3NH and ON4BZ were both heard calling SP3PI but no QSO was noted. Tropospheric conditions on September 12 were about the best this year. G3FZL was a good 559 for about an hour and G5MA was worked at 569 and 567 on phone. On the morning of the 13th G6XM and G5YV were both worked (579). GM2FHH is now running skeds with G3BA (Sutton Coldfield) and has heard him three times out of six. GM2FHH is on every morning from 06.30/07.00 on 144-040 Mc/s.

Welsh News

GW3MFY (Bridgend) heard no Europeans during the aurora of September 4/5. A report by G3JGJ who had worked G6XM, prompted GW3MFY to turn the beam north. At 19.45 G2NY was heard calling CQ but numerous calls were of no avail. No further auroral signals were logged until G2XV was heard calling CQ at 23.31 B.S.T., but still no luck! G3DVK then appeared—no reply again. At midnight, G3JZG was worked, and the signals changed to T9 halfway through the QSO. G5YV was worked for the first time at 00.40 on the 5th and GM3EGW was heard at 00.50. The beam was north-east. The contest was a little disappointing, only eight QSOs in 14 hours of operation. GW3MFY is all for more c.w. operating, and is looking forward to the c.w. only contest—these weak phone carriers are very exasperating! GW3MFY makes a plea for more tuning of the h.f. end of the band—a lot of QSOs are lost because of failure to do this.

Two Metre News from Sweden

SM6BTT (Gothenburg) points out that the SM7BTT mentioned in August BULLETIN should have been himself. The letters are the "personal" attribute of Swedish calls and do not normally change. The figure represents the call district and only changes if the operator moves. SM6BTT operates on 144.304 or 144.120 Mc/s with push-pull QB3/300 (500 watts) on c.w. and phone. The aerial is a 24 ft. long Yagi 13 elements (gain 16 db). SM6BTT continues his meteor scatter sked with HB9RG. Each has heard the other several times, but no QSO has yet been established.

SM5MN (Swedish V.H.F. Manager) reports the first SM/OK QSO on 2m between SM6ANR and OK1VR/P on September 5; reports were 569 and 579 respectively. Recently the "WASM 144" Certificate was announced in Sweden but it was thought impossible to win it owing to lack of activity in SM2. However SM2CFG appeared sensationally in the band, working astonished SM3, 4 and 5. At least four "WASM 144" diplomas are the result! SM5MN has recently worked SP3PD and SP5AU via the aurora in addition to some DLs and one LA. GM2FHH was heard in Linköping RS55 for several hours on September 4 but did not hear SM5MN's many calls. The signals were best with the beam pointing 320°.

Seventy Centimetres

To stimulate interest GM6WL went portable on 70cm recently. On August 17, from Kilmacolm (Renfrewshire) signals were exchanged at S9+ on phone with GM3DDDE (Corstorphine) and GM3NG (Carlisle). On August 27 a trip was made to Queenslie Moor (near Lochwinnoch, Renfrews) 56 miles from Edinburgh, in pouring rain. Although this QTH was almost 1,000 ft. a.s.l. the signals (RS57) were not nearly so strong as at Kilmacolm, owing to destructive reflections from other hills. Carlisle was not so badly affected and signals were still very strong. From near Kirkoswald (Ayrshire) 500 ft. a.s.l., signals were S9+ phone, both ways, to G13FWF, also portable on a high QTH, north-west from Larne (about 56 miles). Phone from Queenslie Moor was heard by GM6XW (Larbert) at terrific strength. This proved to be a curtain raiser for the opening of September 10 when, after a land line message from an enthusiastic and energetic G13FWF reception was achieved.

Glasgow to Drumbo is about 116 miles. G13FWF received GM6WL's c.w. at 339 with a lot of fading. On September 12 a QSO was made hour to hour on 70cm. GM6WL on c.w. and phone was peaking to S9, G13FWF being RST 559 with deep QSB.

On the Wednesday, G15AJ was contacted on 2m and reported hearing the 70cm signals in Bangor about 339. Eventually a crossband QSO was obtained with G15AJ on 2m and GM6WL on 70. This was repeated on the Thursday with better results: G15AJ (2m) was 589 and GM6WL (70cm) was 549. On September 13 only c.w. signals were possible—conditions were rather poorer, and some technical trouble came up! On the 15th and 16th signals were exchanged both ways. During the Kirkoswald expedition GM3GUO was able to test a straight three as the 25 Mc/s tunable i.f. On the shore road past Turnberry between Maidens and Gowan G13FWF was received whilst GM3GUO was moving in his van at practically sea level.

F8MX/A has now worked five countries (DL, F, G, ON, PA), on 70cm but has not yet counted the counties!

Four Metres

G5MR (Hythe, Kent) asks us to correct a slip in the September issue. F3RA, F9CZ, F9BI, and F9NN were all worked. Many more French stations are now tuning the U.K. band, and are therefore workable. A tribute is paid by G5MR to F8GH, whose assistance has been most invaluable, both in listening almost daily on the British band, and also in encouraging his compatriots to do likewise. G5MR says there are at least 17 French stations available to work us—he has himself worked 15 of them.

It is hoped that F8GH's enthusiasm will be helped by keen co-operation from this side of the Channel, particularly during the November Contest, when F8GH is certain to have all his friends "lined-up" for us. Please keep this contest in mind—the rules appear elsewhere in this issue. Everyone who can work 4m is exhorted to "have a go" this time, and make the occasion worthwhile. G2JF may be taking part, as well as G5MF and G5MR from south-east Kent.

G5MR reports that no further ionospheric opening has been experienced since August 10. FA stations were worked or heard on seven different days during the summer. On June 24 CN8s were heard on 4m (G5MR understands he was the first G to do so) and they have been heard twice since. On the other hand, tropospheric conditions have been mainly good with six more French stations heard for the first time, including F3SL and F8SX (both in the Ardennes) and F3NJ (near Romorantin), about 100 miles south-south-west of Paris. F3NJ and F8SX are known to be listening for Gs and it is thought that F3SL will soon be able to do the same.

Twenty-three Centimetres

We are glad to know there are some keen types who are experimenting regularly on this band and are writing to let us know about this work.

G3FUL (Luton), with the invaluable assistance of G3BVU and G3JZW carried out tests on September 7. G3BVU travelled with G3FUL's transmitter and his own 2m portable transmitter and receiver. G3JZW, with his portable 2m gear, maintained a link with him from Dunstable Downs (two miles south-west of Dunstable). G3FUL's transmitter is a self-excited 703A with 17½ watts input, modulated by an 807. The output is fed via co-ax to ten stacked half-wave end-fed elements backed with a wire mesh reflector. G3FUL's receiver uses a 955 oscillator, with a tuning range of 402 to 423 Mc/s exciting a small cavity; the third harmonic is fed with the signal to a CV102 crystal mixer and the output to a 30 Mc/s i.f. detector and a.f. amplifier strip. An eight-element stack with sheet metal reflector was used.

The first contact was made at 15.00 with the transmitter

near Chipping Norton, Oxon. At 48 miles, signals were very strong (59). Then followed a contact from Warwickshire, also 59 at 15.40. The transmitter was then taken to a point four miles south of Stow-on-the-Wold (Glos.) and at 18.00 faint signals (RS53) were received at a distance of 50 miles. It was observed that heavy showers crossing the path made reception impossible at times. In the present position of only having one 1250 Mc/s transmitter and receiver the 2m link is invaluable in obtaining direction for beams. We are sure, however, that G3FUL and his friends are looking forward to 23cm contacts over these distances, and so are we! Congratulations on the efforts so far.

Six Metres

G4HLX (Newcastle-on-Tyne) reports that the aurora was very intense on 6m (September 3). ZE2JV heard G4LX for the first time on September 6. G4LX heard ZE2JV on September 7 and every evening since! Signals were best on September 8. ZE1JZ was also heard on September 8. G4LX and ZE2JV had their first QSO at 19.10 G.M.T. on September 15 by ionospheric scatter. At the time it seemed as if auroral conditions were forming.

G4LX also reports that W7RT is on 50.070 Mc/s with 400 watts to a 16-element beam every Saturday and Sunday from 15.00 to 17.00 G.M.T. calling CQ DX on the hour and every quarter. Reports and QSOs wanted please! SM, OH and LA stations please note also!

French News

F8MX/A (St. Valery) was very active this summer, both on 2m and 70cm. F8MX was there longer than usual, F9CQ not so much, but they seem to have had an enjoyable time. F9CQ is keeping the weekly sked from Paris for G stations on Wednesdays at 21.00 G.M.T. on 2m. F9QW and F8LO are now also in the sked and it is hoped more F stations will join in. F9CQ extends his thanks to G2JF, G5NF, G3BDQ and G6NB for their help. If the time of this sked interferes with 4m activity, F9CQ would like to receive suggestions provided the 2m sked can be kept reasonably early. The v.h.f. contest found greater G activity. The weekend of September 13/14 was very good in France north of the Loire for the ON/PA direction but not for England except to the south-east area.

October deadline the 18th as usual please.

Worked and Heard on Two

A.1491 (Palmer's Green N.13) July 14-August 14.
Heard: F8MX/A, G2FM, 2IF, 2UJ, 2WJ, 2XV, 2ABD, 2ANT, 2DTC, 2DTC/M, 2DZH, 2FMN/A, 2HDY, 3CO, 3FD, 3FP, 3AEX, 3BFP/A, 3C3G, 3CNF, 3EVV, 3EYV, 3FCQ, 3FZL, 3GDR, 3GHI, 3GNR, 3GOZ, 3GSE, 3GZJ, 3GZJ/M, 3HBW, 3HGE/M, 3HRH, 3HWR, 3HZK, 3IRS, 3IRW, 3JFR, 3JMA, 3JMS, 3JQN, 3JWQ, 3JXN/M, 3JYT, 3KEQ, 3KEQ/P, 3KLI, 3KMD, 3LBM, 3LCH, 3LCK/A, 3LTF, 3LTF/A, 3LVO, 3LYD, 3MEO, 3MEO/A, 3MLS, 3MNR, 3MPS, 4DC, 4KD, 5DS, 5DT, 5MA, 5NF, 5UM, 5YV, 6IJ, 6JP, 6LL, 6NB, 6NF, 6QN, 6SC/P, 6XM, 6YP, 8AL, 8CK, 8DR, 8SC, 8SK, 8B2RS, 3IGY.

B.R.S. 19162 (Dewsbury, Yorks.)
Heard: F8MX, G3BA, 3BNL, 3DKF, 3DJJ, 3EYV, 3GGR, 3GGR/P, 3GSO, 3HBW, 3HHD, 3HRH, 3HYN, 3HZK, 3IVK, 3JOO, 3IRS, 3IWI, 3JZG, 3KEQ, 3KFD, 3KQF, 3LHW, 3LTF, 3MED, 4DC, 5DF, 5DW, 5HB, 5MA, 6JS, 6NB, 6RH, 6XM, 6XMA, 6VZ, 6EPL.

B.R.S. 20133 (Melton Mowbray) July 15-August 15.
Heard: G2BVW, 2CDB, 2DMN, 2FMO, 2FMW, 2HCG, 3APY/M, 3BA, 3BNL, 3DJJ, 3DKF, 3DVK, 3EYV, 3FAN, 3FGT, 3GSO, 3HYH, 3IRS, 3JWQ, 3KBA, 3KEF, 3KQF, 3KHU, 3KYT, 3MNO, 5CP, 5CP/M, 5GN, 5HB, 5KG, 5ML, 5YV, 6YU, 6XM, 6CZ, 6VZ, 6B2RS, 6B3IGY.

G2CZS (Chelmsford) July 23-August 17.
Worked: G2AIQ, 2DUS/M, 3ANB, 3BII, 3BVU/A, 3FIJ, 3GIZ/M, 3INU, 3IRS, 3JMA, 3JNL, 3KHA, 3LTF, 3MPS, 3VI, 6LL, 8LN, 8SK.

G3JGJ (Paignton, S. Devon) July 10-August 18.
Worked: G2ADZ, 2AHP, 2MV, 2RY, 3APY/P (Nr. Bridport Dorset), 3EYU, 3FIH, 3HBW, 3HZK, 3ICO, 3KEQ, 3KHA, 3LHA/M (Paignton), 3LTF, 3PMU, 4DC, 5BM, 5NF, 6SP/P (Nr. St. Austell), 6SP/P (St. Agnes Beacon, Cornwall), 6XM, 8DA, 8DR, 8VZ, GC2FZC, GW3MFY, 8SU.
Heard: F8MX, G2FM, 3IRS, 3EYV, 5DW, 6AG/P (Cornwall) GB3IGY.

Due to pressure on space a number of calls heard and worked lists have been held over.

Society News and Proceedings

R.S.G.B. Radio Hobbies Exhibition

THE Second Annual R.S.G.B. Radio Hobbies Exhibition (to be held in the Old Hall of the Royal Horticultural Society, Vincent Square, London, S.W.1) will be opened at 12 noon on Wednesday, November 26 by Air Marshal Sir Raymond Hart, K.B.E., C.B., M.C. Sir Raymond, who is Controller of Engineering and Equipment at the Air Ministry, was responsible for the first training of radar operators and maintenance personnel and for developing radar reporting systems. He is Patron of the R.A.F. Amateur Radio Society and a Vice-President of the Radar and Electronics Association.

During the period of the Exhibition, displays will be staged by the Royal Navy, the Royal Air Force and Army Territorial Radio Units. Colour television will be demonstrated and an Amateur Radio station (GB3RS) will be in continuous operation. Several radio manufacturers will be showing home construction kits for transmitters, receivers, hi-fi amplifiers and aerials. Multi-band and transportable aerials and towers will be shown for the first time in England, and also a new low-priced communications receiver. I.G.Y. activities will be featured.

A silver trophy will be awarded for the outstanding home constructed piece of equipment on show, and one of the latest Racal communication receivers (valued at £400) will be given to the holder of the lucky number card obtainable free at the Exhibition entrance.

Last year more than 7,000 visitors attended the Exhibition. It is fully expected that this year the attendance will run into five figures.

The Exhibition is being organised for the Society by Mr. P. A. Thorogood, G4KD (35 Gibbs Green, Edgware,

Middlesex), to whom all enquiries should be addressed.

The Exhibition will be open from Wednesday, November 26 until Saturday, November 29 (11 a.m. to 9 p.m. daily). Admission 2s.

Up to the time this issue closed for press the under-mentioned concerns had reserved space at the Exhibition:

Admiralty (Royal Navy).	Minimitter Co.
Air Ministry (R.A.F.).	Mullard Limited.
British National Radio School.	E. J. Philpott's Metalworks Ltd.
Clyne Radio Ltd.	Premier Radio.
Cossor Instruments Ltd.	Short Wave Magazine Ltd.
Data Publications Ltd.	Standard Telephones & Cables Ltd.
E.M.I.	Taylor Electrical Instruments Ltd.
Enthoven Solders Ltd.	Teletron Ltd.
Home Radio (Mitcham) Ltd.	War Office (Army).
Iliffe Press Ltd.	Whiteley Electrical Radio Co. Ltd.
Jason Motor & Electronic Co.	
K. W. Electronics Ltd.	
London Electric Wire Co. & Smith's Ltd.	

The R.S.G.B., London U.H.F. Group and British Amateur Television Club will also be exhibiting. Colour Television will be demonstrated by Mr. B. Rogers (G3ILI/T).

Forthcoming Events

IN response to requests from members the Council has decided to revise its policy in regard to the publication of dates of Forthcoming Events.

As from the November 1958 issue of the BULLETIN, dates of meetings at which no lecture or specified function is arranged will be published provided standing dates are revised at least once every three months.

In order to avoid mistakes and duplication, items for inclusion in Forthcoming Events must reach Headquarters via the appropriate Regional Representative. This applies to Affiliated Societies as well as to R.S.G.B. Town Groups.

Lists of Forthcoming Events must reach Headquarters by not later than the 22nd of each month.

Receipts

RECEIPTS for subscriptions paid by cheque, bankers' order or postal order are not now issued unless specially requested. Receipts are drawn, however, and kept on file at Headquarters for six months.



A view of the Society's stand at the National Radio Show, Earls Court, London. Throughout the period of the show the stand was a centre of attraction. More than sixty new members were enrolled and 700 members signed the visitors' book. Mr. F. F. Ruth (G2BRH) was stand manager.

London Meetings

THE following programme of meetings and lecture meetings has been arranged:

- October 24, 1958 "Radio Signals from Earth Satellites" by A. W. Nichol, B.A. (Cavendish Laboratory, Cambridge).
 November 14, 1958 "Radio Conditions in Antarctica," by Major G. Watson, ex-VP8BP (War Office).
 December 12, 1958 Annual General Meeting at the Overseas League, St. James's, London, S.W.1.
 January 23, 1959 Presidential Address.
 February 27, 1959 "Recent Developments in the Microwave Field," by K. W. Drummond (Mullard Ltd.).
 March 20, 1959 "Single Sideband Techniques," by B. J. Rogers, G3ILI (Bush Radio Ltd.).

All the meetings, with the exception of the A.G.M., will be held at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2. Meetings will commence at 6.30 p.m. Buffet tea from 6 p.m.

* * *

LESS than 50 members attended the opening meeting of the session when Mr. H. V. Sims, of the British Broadcasting Corporation, Wood Norton, Evesham, Worcs., lectured on transmitting aerials. The lecture was illustrated by numerous slides and accompanied by some of the most interesting demonstrations ever staged at an R.S.G.B. meeting. It is regretted that so few members attended

the meeting which was held in the lecture theatre of the Lighting Service Bureau on the top floor of the Institution of Electrical Engineers building.

The Chair was taken by the President (Mr. L. E. Newnam, B.Sc., G6NF) and a vote of thanks to the speaker was proposed by Mr. J. W. Mathews, G6LL (Vice President). Mr. D. A. Findlay, D.F.C., G3BZG (Immediate Past President), Mr. N. Caws, G3BVG (Hon. Treasurer) and Mr. W. H. Allen, M.B.E., G2UJ (Council Member) were in the audience.

Region 2 Representation

TO meet the wishes of members living in the northern parts of Region 2, it has been decided that as from January 1, 1959, the towns of Middlesbrough and Hartlepool will operate together under one Area Representative, and the counties of Durham and Northumberland under one County Representative.

The present T.R. for West Hartlepool (Mr. L. M. Arrow-smith) will become A.R. for Middlesbrough and Hartlepool.

Corporate members living in the counties of Durham and Northumberland are invited to submit a nomination for the office of C.R. for the two counties in accordance with the requirements of the notice published on page 128 of the September 1958 issue of the BULLETIN.

Northern Audio Fair

COMPLIMENTARY tickets for the Northern Audio Fair, to be held at the Grand Hotel, Harrogate on October 24, 25 and 26 can be obtained from Headquarters on receipt of a s.a.e. The Fair will be open from 11 a.m. to 9 p.m. daily. More than 50 firms have booked space.

Resumé of the Minutes of the Proceedings at a Meeting of the Council of the Radio Society of Great Britain held at New Ruskin House, Little Russell Street, London, W.C.1, on Monday, August 25, 1958, at 6 p.m.

Present: The President (Mr. L. E. Newnam in the Chair), Messrs. W. H. Allen, H. A. Bartlett, C. H. L. Edwards, W. J. Green, F. Hicks-Arnold, J. H. Hum, W. R. Metcalfe, A. O. Milne, W. A. Scarr, A. C. Williams, E. W. Yeomanson (Members of the Council), John Clarricoats (General Secretary) and John A. Rouse (Deputy General Secretary).

Apologies for Absence: Apologies for absence were submitted on behalf of Messrs. N. Caws, D. A. Findlay and E. G. Ingram.

Absent: Messrs. R. H. Hamman and H. W. Mitchell.

Reports of Committees

Resolved

(i) to receive as Reports the Minutes of Meetings of the Finance and Staff, Exhibition, Membership and Representation, Technical and V.H.F. Committees.

(ii) to accept a recommendation of the Membership and Representation Committee requesting the Contests Committee to consider amending the rules for future N.F.D. events so that entry is not limited to groups which have appointed an A.S.R., T.R. or A.R.

(iii) to accept recommendations of the Technical Committee in respect to the award of the Bevan Swift Memorial Prize and Ostermeyer Trophy for 1958.

(iv) to accept a recommendation of the V.H.F. Committee that the Region 1 Representative (Mr. B. O'Brien, G2AMV) be invited to organize tests with Jodrell Bank Observatory with a view to seeing whether it is possible to reduce the area around the Observatory in which operation on 70.2-70.4 Mc/s is not at present permitted.

(v) to accept recommendations of the V.H.F. Committee regarding the future operation of the R.S.G.B. News Bulletin Service on two metres.

(vi) to accept a recommendation of the V.H.F. Committee that the Society offers to make a contribution not exceeding £10 towards the travelling expenses of lecturers attending the Scottish V.H.F. Convention 1959.

It was reported that the Technical Committee had set up a small ad hoc Committee to consider a proposal that the Society should inaugurate a long term Technical Development Programme.

Membership

(a) Resolved (i) to elect 94 Corporate Members and nine Associates.

(ii) to grant Corporate membership to two Associates.
 (b) The Secretary reported that 98 of the 586 members whose subscription was due on May 1, 1958, became three months overdue on July 31, 1958, and that 23 of the members concerned had written to resign.

I.A.R.U. Region 1 Conference

Consideration was given to a report covering the main items of business dealt with at the Bad Godesberg Conference.

Resolved (i) to receive the Report.

(ii) to authorize the Secretary to inform the Executive Committee of Region 1 Division that the R.S.G.B. is prepared to act as Host Society at the 1960 Conference.

(iii) to authorize the Secretary to make tentative enquiries with a view to selecting a suitable venue for the Conference.

Council Elections

Resolved to nominate the following members to fill the vacancies in the Council which will occur on December 31, 1958:-

President: Dr. R. L. Smith-Rose, C.B.E.

Members: Mr. J. D. Kay (G3AAE) and Mr. G. M. C. Stone (G3FZL). It was noted that a vacancy in the office of Zone A representative would occur on December 31, 1958.

It was agreed to inform a member who had written to enquire that there is no objection in principle to canvassing at Council elections.

C.W. Probation Period

It was reported that 10 out of 16 members of the North Kent Radio Society voted recently for the reintroduction of the 12 months' c.w. probationary period for new licensees whilst three others voted for a six months' period.

The Society's representative asked whether the Council would be prepared to conduct a poll of members and abide by the majority decision, even if it meant asking the G.P.O. to reintroduce the c.w. probationary period.

Resolved to take no action on the proposal to conduct a poll of members.

The 3.5-3.8 Mc/s Band

A letter was submitted from a member in which he complained of the practice of certain fixed stations who "idle" high power teleprinter transmitters on frequencies in the 3.5-3.8 Mc/s band.

It was agreed to draw the attention of the G.P.O. to the practice.

The Mullard Award

It was reported that Mullard Ltd. had offered to donate to the Society a special trophy to be known as the Mullard Award.

Messrs. Caws, Milne, Scarr and the General Secretary were appointed to serve on an ad hoc Committee which Mullard Ltd. had suggested should be set up to draft terms of reference governing the Award.

The meeting terminated at 9.45 p.m.

Tests and Contests

Second 144 Mc/s Field Day 1958

As a welcome change from previous years, the weather seems to have been fairly kind throughout the country for the Second 144 Mc/s Field Day held on July 6, 1958. Many portable and quite a few mobile stations were active but it is a little disappointing therefore that only about 50 per cent. bothered to submit their logs for judging. Conditions were above average for most of the contest and those portable stations on reasonably exposed sites were able to work consistently over distances in excess of 200 miles. The few stations in the south east corner of England benefited from a considerable amount of continental activity though foreign stations were not worked from the Midlands or the North. Best conditions existed roughly along a line from the Bristol Channel to the Firth of Tay.

In all, 32 portable and five mobile entries were received, together with two check logs. The accuracy of logging was generally good. However, some entrants were rather inaccurate when estimating distances, in some cases being up to 50 miles in error.

The Portable Section was won easily by F. A. Griffiths (GW3MED/P) of Hartford, Cheshire, on a very fine site to the north of the Snowdon mountain group. The equipment used was a 6BW7-5763-5763-832 transmitter running 18 watts input, modulated by a 6N7. The cascade

converter fed into a CR100 receiver and the aerial was a 4-over-4 slot beam 18ft. high. The final score of 16115 points resulted from 93 contacts with consistently good results to the Scottish stations. The runners-up were P. J. Pollard (G3DIV/P) and R. C. Taylor (G2HCJ/P).

The Mobile Section, which was rather poorly supported, was won by C. R. Plant (G5CP/M) of Chesterfield, who used a Hamobile at 12 watts input and a double halo aerial on his car, to score 5,414 points from 45 contacts. Runner-up in this section was H. M. Synge (G3BOC/M) of the Wirral, Cheshire.

Check logs from EI2W and G3BVU/A are gratefully acknowledged.

RESULTS

Portable Section			Mobile Section		
Position	Call-sign	Points	Position	Call-sign	Points
1	GW3MED/P	16,115	17	G3EEO/P	7,492
2	G3DIV/P	15,233	18	G3MAR/P	7,388
3	G2HCJ/P	13,269	19	G3DVK/P	6,547
4	G8SB/P	12,469	20	G3HWS/P	6,527
5	G3WQ/P	10,710	21	G3GGR/P	6,074
6	G3ION/P	9,621	22	G3HII/P	5,971
7	GW3GA/P	9,480	23	G2XV/P	5,483
8	G2DTP/P	9,316	24	G6TD/P	5,322
9	G3FKO/P	9,015	25	G3FD/P	5,246
10	G3ION/P	8,560	26	GW3GWA/P	4,010
11	G6XM/P	8,528	27	GM3IWA/P	3,804
12	G3APY/P	8,463	28	G3BNL/P	3,537
13	GW3YZ/P	8,425	29	G3LCH/P	3,130
14	G3GOP/P	8,423	30	G3JZG/P	3,065
15	G3ERD/P	8,299	31	GM3FGI/P	2,275
16	G3KMT/P	7,498	32	G3AIM/P	1,882

1	G5CP/M, 5,414	2	G3BOC/M, 5,336	3	G3AYT/M, 4,814
4	G3GZJ/M, 3,113	5	G4LU/M, 2,646		

The G5VO Trophy

The G5VO Trophy, which came into being in 1957, was donated to the Scarborough Amateur Radio Society by Jack Hargreaves (G5VO), a founder member since the formation of the original Scarborough and District Short-Wave Club in 1933. The award is made annually to the listener showing most improvement in learning Morse. A handicap devised by G5VO gives equal chances to the "speed-merchant" and to the complete beginner.

The award was won in 1957 by A. Wilson who although still a schoolboy is now G3MAE, and this year goes to R. S. Scales (B.R.S. 21598) who will hold the plaque for twelve months.

The plaque features the familiar diamond emblem, but with a Morse key inserted between the aerial and earth symbols, mounted on an oak base bearing the words "G5VO Trophy" and "S.A.R.S. Morse Proficiency Award." Ample space has been left for winners' names for many years to come.

The committee and members of the Scarborough Society are most grateful to G5VO for the Trophy and for evolving an interesting and useful competition.



The G5VO Trophy

Contests Diary

1958

- October 25-26 - CQ World Wide DX Contest (Phone Section)¹
- November 8-9 - Second 1-8 Mc/s Contest²
- November 15-16 - Second 70 Mc/s Contest³
- November 22-23 - 21-28 Mc/s Telephony Contest⁴
- November 29-30 - CQ World Wide DX Contest (C.W. Section)¹

1959

- January 17-18 - B.E.R.U. Contest
- January 24 - 144 Mc/s C.W. Contest
- February 7-8 - Affiliated Societies' Contest
- February 21-22 - First (Short) 1-8 Mc/s Contest
- March 7-8 - 144 Mc/s Open Contest⁵
- March 21-22 - 1250 Mc/s Tests
- April 11-12 - Low Power Contest
- April 26 - D/F Qualifying Event
- May 3 - First 144 Mc/s Field Day (c.w. only)⁵
- May 10 - D/F Qualifying Event
- May 24 - 420 Mc/s Contest
- June 6-7 - National Field Day
- June 20-21 - First 70 Mc/s Contest
- June 28 - D/F Qualifying Event
- July 4-5 - Second 144 Mc/s Field Day⁵
- July 12 - D/F Qualifying Event
- September 5-6 - National V.H.F. Contest. European V.H.F. Contest⁵
- September 20 - Low Power Field Day
- September 27 - R.A.E.N.
- November 7-8 - Second 1-8 Mc/s Contest
- November 21-22 - R.S.G.B. Telephony Contest

¹ For details, see page 131, R.S.G.B. Bulletin, September, 1958.

^{2, 3, 4} Details in this issue.

⁵ These contests are arranged to take place during the periods suggested by the Region I V.H.F. Committee.

Rules for the R.S.G.B. 21/28 Mc/s Telephony Contest November 22-23, 1958

RADIO amateurs throughout the world are invited to take part in the third R.S.G.B. Telephony Contest to be held this year on November 22 and 23.

The rules are substantially the same as in previous years apart from some rearrangement and clarification. The attention of overseas contestants is drawn to the additional bonus for working each additional ten G3 stations. Practically all post-war licencees have been allocated call-signs in the G3 series which now comprises the largest single group of U.K. stations. It is hoped the new bonus system will encourage overseas amateurs to work such stations.

Rules

1. The contest will start at 07.00 G.M.T. on Saturday, November 22 and end at 19.00 G.M.T. on Sunday, November 23, 1958.
2. The contest is open to licensed amateurs in all parts of the world.
3. Entrants must operate in accordance with the terms of their licences.
4. Contacts may be made using any telephony system for which the entrant is licensed. Contacts with unlicensed stations will not count for points. Proof of contact may be required.
5. An exchange of RS reports followed by a three figure serial number starting with 001 for the first contact and increasing by one for each successive contact (for example, 58001) must be made before points can be claimed.
6. Only one contact on each band may be made with a specific station, whether fixed, portable, mobile or alternative address. Duplicate contacts must be logged and clearly marked as duplicates without claim for points. Cross-band contacts may not be claimed.
7. Only the entrant will be permitted to operate the station for the duration of the contest.
8. Entries must (a) be clearly written or typed on one side only of foolscap or quarto paper; (b) be set out in the form shown in the examples below; (c) be addressed to the Contests Committee, Radio Society of Great Britain, New Ruskin House, Little Russell Street, London, W.C.1, England, the name of the contest being clearly shown at the top left-hand corner of the envelope which must be postmarked not later than December 8, 1958.
9. British Isles stations may not work each other for points. Overseas stations may only claim points for contacts with British Isles stations (G, GC, GD, GI, GM and GW). Scoring will be as follows:
British Isles stations.—Each completed contact will score five points. In addition, a bonus of 20 points may be claimed for the first contact with each new country on each of the bands. For the purposes of scoring, the official countries list will apply, with the exception that VE, VK, W/K, ZS and ZL call areas will each count as a separate country for scoring purposes.
Overseas stations.—Each completed contact with a British Isles station will score five points. In addition, a bonus of 50 points may be claimed for the first contact with each British Isles country—numerical prefix, i.e., G2, G3,

G4, G5, G6, G8, GC2, GC3, GC4, GC5, GC6, GC8, GD2, GD3, GD4, GD5, GD6, GD8, GI2, GI3, GI4, GI5, GI6, GI8, GM2, GM3, GM4, GM5, GM6, GM8, GW2, GW3, GW4, GW5, GW6 and GW8. A further 50 bonus points will be scored for each additional ten G3 stations worked.

10. The Whitworth Trophy will be awarded to the leading British Isles station and the Metcalfe Trophy to the non-licensed British Isles member submitting the best check log in the opinion of the Contests Committee. In addition, certificates will be awarded to the leading station in each of the other five British Isles country-prefix zones; also to the runner-up in the Trophy winner's zone, and to the leading station in each overseas country. VE, VK, W/K, ZL and ZS call areas counting separately as in Rule 9.

SAMPLE ENTRY

R.S.G.B. 21/28 Mc/s Telephony Contest Claimed Score
November 22-23, 1958 Call-sign

Name

Address

Transmitter Power input watts

Modulation system(s) used

Receiver Aerial(s)

DECLARATION: I declare that this station was operated strictly in accordance with the rules and spirit of the contest, and I agree that the decision of the Council of the R.S.G.B. shall be final in all cases of dispute. I certify that the maximum input to the final stage of the transmitter was watts.

Date Signed

Failure to sign the declaration may involve disqualification of the entry.

Date	Band Mc/s	Time G.M.T.	Call-sign of station worked	My report on his signals and serial number	His report on my signals and serial number	Points claimed	Bonus Points	Leave blank
22	21	0706	G3XXX	57001	57003	5	50	
22	21	0714	G3ZZZ	56002	55006	5	—	
23	21	0750	GM3YYY	55003	57013	5	50	
23	28	0758	G3ZZZ	54004	55015	5	50	
Total (Points Claimed + Bonus Points) 20 + 150 = 170								

The closing date for posting entries is December 8, 1958

Second 1.8 Mc/s Contest, 1958

APART from being re-arranged in the format adopted earlier this year, the rules for this event are the same as for last year.

When: 22.00 G.M.T. on Saturday, November 8, to 08.00 G.M.T. on Sunday, November 9, 1958.

Eligible Entrants: All fully paid-up Corporate members of the R.S.G.B. resident in G, GC, GD, GI, GM and GW.

Contacts: C.w. (A1) only in the 1.8 Mc/s band.

Scoring: Contacts with stations in the British Isles (G, GC, GD, GI, GM and GW) will score one point only: contacts with stations outside the British Isles will score three points.

Contest Exchanges: RST reports followed by the contact number starting with 001. All reports must be acknowledged with "R."

Logs: (a) Must be tabulated in columns headed (in this order): "Date/Time G.M.T.", "Call-sign of station worked", "Report and serial number sent", "Report and serial number received", "Claimed Score."

(b) The cover sheet must be made out in accordance with R.S.G.B. Contests Rule 5. The declaration must be signed.

(c) Entries must be postmarked not later than November 24, 1958.

Power Input: The power input to the final stage or any preceding stage of the transmitter must not exceed 10 watts.

Awards: At the discretion of the Council, the Victor Desmond Trophy to the winning station and certificates of merit to the stations placed second and third. In addition, the Maitland Trophy will be awarded to the Scottish member with the highest aggregate number of points in this contest combined with the First 1.8 Mc/s Contest 1959. A certificate of merit will also be awarded to the non-transmitting member submitting the best check log.

The General Rules for R.S.G.B. Contests published on page 437 of the March 1958 Bulletin apply to this contest.

Second 70 Mc/s Contest, 1958

ENCOURAGED by the recent news that the band is not to be withdrawn at the end of 1958 but is to be reviewed on a year-to-year basis, many more U.K. stations are expected to be active during the Second 70 Mc/s Contest next month.

When: From 17.00 to 23.59 G.M.T. on November 15 and from 07.00 to 19.00 G.M.T. on November 16, 1958.

Locations: Stations, fixed and portable, must be operated from the same site throughout the contest.

Eligible Entrants: All fully paid-up Corporate members of the R.S.G.B. resident in Europe. Multiple-operator entries will be accepted provided only one call-sign is used, in accordance with rule 7.

Contacts: May be made on A1 or A3 with stations operating in any band between 50 and 150 Mc/s.

Scoring: Will be on the basis of one point per mile.

Contest Exchanges: RST (RS) reports followed by the contact number (starting with 001) followed by the location (e.g., RST 579001 SNE, Oxford).

Entries: (a) The cover sheet must be made out in accordance with R.S.G.B. Contests Rule 5 and the declaration signed.

(b) Logs must be tabulated in columns headed (in this order): "Date/Time (G.M.T.)", "Call-sign of Station Worked", "His Band (Mc/s)", "My report on his signals and serial number sent", "His report on my signals and serial number received", "Location of station contacted", "Points Claimed."

(c) Entries must be postmarked not later than Monday, December 1, 1958.

Awards: At the discretion of the Council, a certificate of merit will be awarded to the winner. A certificate of merit will also be awarded to the non-transmitting member submitting the best check log.

The General Rules for R.S.G.B. Contests published on page 437 of the March 1958 Bulletin apply to this contest. A reprint may be obtained by sending a stamped addressed envelope to R.S.G.B. Headquarters.

National Final D/F Contest

THE National final of the above event, which took place on Sunday September 7, 1958 on a fine sunny afternoon, was organized by the Slade Radio Society of Birmingham.

In the absence of the Chairman of the Contests Committee, Mr. D. A. Findlay, G3BZG, who it was hoped would be able to attend, the Slade A.S.R., Mr. G. Nicholson (G3HKC) agreed to act as umpire.

Of the 12 qualifiers, the following nine arrived to take part in the final: H. W. J. Drury, B.R.S. 5035; J. K. Finch, B.R.S. 15688; J. J. Grant, B.R.S. 6395; D. Hyde, B.R.S. 21356; C. Hollick, B.T.H. (Rugby); E. L. Mollart, B.R.S. 10977; G. T. Peck, B.R.S. 15402; D. H. Simmonds, Slade; G. C. Simmonds, Slade.

The start and finishing point was at Yarningale Common near Claverdon, Warwickshire, a distance of about 15 miles south-east of Birmingham.

Transmitter A was sited in a dense wood near the village of Maxtoke, about 14 miles north-north-east of the start and Transmitter B about 2½ miles south-west of the start. The second transmitter was operated from a parked car and proved, as was intended, easy to locate. Three of the competitors located Transmitter B after only three transmissions, arriving at 14.07, but it was not until 15.42 that Transmitter A was located by the eventual winner of the contest. Despite the fact that Transmitter A was 14 miles away, a good signal was received and the competitors were released at the allotted time of 13.35.

A summary of the arrivals at transmitters is given below:

Station A.—(G3JBN/P): E. L. Mollart, 15.42; J. K. Finch, 15.52½; G. T. Peck, 16.24 (arrived after finish of test).

Station B.—(G3EVC/P): J. K. Finch, 14.07; G. T. Peck, 14.07; E. L. Mollart, 14.07; D. H. Simmonds, 14.39; H. W. J. Drury, 14.41; C. Hollick, 14.59; J. J. Grant, 15.09.

Final placings.—(Subject to confirmation): 1, E. L. Mollart; 2, J. K. Finch.

Mr. Mollart was the first competitor to locate his second transmitter and would have won the contest, but on arriving at transmitter A he found he had lost his entry form which had already been signed by the operator at Transmitter B. He had no alternative but to offer an alternative piece of paper (actually the letter on Slade notepaper giving details of the start) to be signed by the staff at Transmitter A. Mr. Mollart then returned to places where he had taken bearings and found at one of them his form still lying by the roadside. When he returned to the start, with the two signed sheets, the organiser referred him to the umpire to decide whether his entry could be accepted. Mr. Nicholson decided that under his terms of reference he could accept Mr. Mollart's entry and, as there were no protests by other competitors, Mr. Mollart was declared the winner, subject to ratification by the R.S.G.B. Contests Committee.

Second to arrive at Transmitter A was Mr. J. K. Finch who was booked in at 15.52½. Mr. Finch put up a very good show considering that he had a puncture and a faulty sparking plug to attend to during the contest. The only other competitor to find the transmitter was Mr. G. T. Peck, but he arrived after the finish of the contest.

At 18.00 all parties assembled at the Homestead Cafe, adjoining the start where a meal had been arranged, and the umpire announced the results. Prizes had been donated by Slade and were presented to the winners, who seemed to have enjoyed the contest. It is hoped that those who were less successful found the event equally enjoyable.

—G3JZF.

Contests and Awards

AT the recent I.A.R.U. Region I Conference in Bad Godesberg, Germany, the representatives present agreed to place on record their deep concern at the increasing number of awards and contests in Region I. They further agreed that Member Societies should be asked to limit the number of such contests and awards as being in the best interests of Amateur Radio. The motion was proposed by Mr. H. L. Wilson (EI2W) on behalf of the I.R.T.S. and was carried by 11 votes to 2, N.R.R.L. (Norway) and S.R.A.L. (Finland) voting against.

PACC Contest 1958

G3IQE, with a score of 5,544 points was the leading G station in the c.w. section of the DX contest organized by VERON earlier in the year. G3FPK (2,850) and G2HPF (2,601) were placed 2nd and 3rd. GW8WJ (270) was the only British Isles entrant outside England. No U.K. station competed in the telephony section of the contest.

The winner of the c.w. section was PAOLOU with a score of 137,228 points. PAOVB (4,805) led the telephony section.

Czechoslovak DX Contest

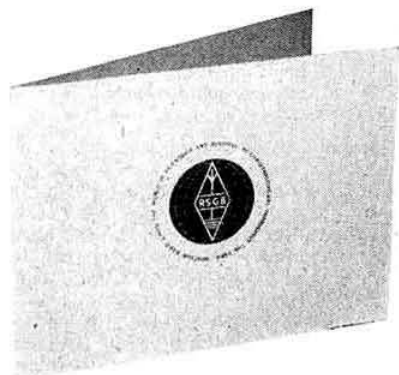
LEAFLETS giving details of the Second International DX Contest organized by the Czechoslovak Central Radio Club due to take place on December 7, 1958, from 00.01 to 12.00 G.M.T. are available on receipt of a s.a.e. from the R.S.G.B. QSL Bureau, 29 Kechill Gardens, Bromley, Kent.

Can You Help?

- Eskil Persson, Storgatan 43, Simrishamn, Sweden, who requires information on the B.46 receiver?
- M. Knight (B.R.S. 21848), 16 Clyde Street, Grimsby, Lincs., who wishes to borrow the handbook or any other information on the Type 3389 Impedance Bridge manufactured by A. C. Cossor Ltd.? Information on the companion 500 c/s oscillator is also required.

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R.A.E.N. Notes and News

By E. ARNOLD MATTHEWS (G3FZW)*

The Network in Action

STORM-FLOODED Essex provided R.A.E.N. with its first ever emergency call-out. The call came on September 6 following severe rain which made many roads impassable and played havoc with telephone lines over a wide area.

During the late evening of Friday, September 5, Insp. Dyer, Chief of Essex County Police Communications Dept. tried to contact the Essex C.C. (Mr. C. H. L. Edwards G8TL) and other members, but so bad were driving conditions that it was not until next morning that the first call was received by Mr. C. L. Fenton G3ABB, who is located near to Chelmsford.

After warning the Chelmsford Area Controller (Mr. Cutting G3GNQ), G3ABB set up a station at County Police Headquarters. G3GNQ immediately alerted members of his group. Mr. Collins, G2DQ, was directed to Laindon Police Station, and Mr. Lowe, G2HPF (using G3BLA's equipment) went to Pitsea Police Station as both stations were out of contact with Police H.Q.

In the afternoon G3GNQ returned home and opened up as a relay station between control and out-stations, there being some QRM from teleprinters. G3KTF took over from G3ABB, who then went on reconnaissance, reporting flood situations and detours required. Later, G3ERN was alerted for similar duties in the Harlow/Epping area. V.H.F. communications having been established by the police about 6.0 p.m., R.A.E.N. mobiles were called in and operations closed.

In a letter to the Essex C.C. the Assistant Chief Constable of Essex (Mr. L. Nightingale) wrote:

"As you will be aware, we were pleased to ask for the services of your R.A.E.N. members on Saturday last, 6th September, in connection with the flood emergency. An attempt had been made on the previous evening to contact you at your home by telephone but, unfortunately, your line was out of order."

"On Saturday morning, however, we were able to contact Mr. Fenton, who attended police headquarters with several other members and set up a control station. A link was then established with our Laindon Station and members also provided road situation reports."

"I should like to take this opportunity to express our thanks to yourself, Messrs. Fenton and Cutting and other members of R.A.E.N. whose rapid assistance in difficult circumstances was so efficiently provided."

Lessons Learned

During the time of the action the Essex C.C. was unable to contact members in Chelmsford either from his home or from London. It is obvious that a difficult situation arises when all means of normal communication, including roads, fail. It was fortunate that conditions enabled sufficient members to be called out once G3ABB had been alerted. In future this situation will be countered by making the fullest use of listener members, who, with licensed members will be given standing instructions to maintain watch on schedule whenever weather conditions warrant such action. Any member receiving an action warning from a user service would put out a call to activate the group with more than a reasonable chance of being successful. It has been found that listener members miss very little of what goes on, and when they receive an alert they can then warn other members in their area by means other than radio. The principle of

schedule watch-keeping in bad weather has already been approved for the Western Trunk Route, and Lincolnshire Group has made full use of listener members for some years.

Lesson No. 2 is that there is no such place as a "safe area." As at Lynton, in N. Devon, the Essex flood was unexpected. It is true that certain parts of the affected area are subject to some flooding, but Chelmsford would be described as a safe place in which to live. In the past many amateurs have said, "We live in a safe area so there's no need for R.A.E.N. here." Some areas are safer than others, without doubt, and amateurs living in such places are often well located to give aid to people less fortunately placed.

Lesson No. 3 is that practice in team-work pays off. Members used each others gear and were experienced in procedure and were able to devote their whole attention to the finer points of the operation.

Around the Groups

Several other groups have reported that they were in a state of readiness during the above-mentioned storm. For example the Dartford A.C., G8UT, offered assistance to the police, but telephone communications were re-established quickly.

Several groups are carrying out strength tests, and the West Essex Group is repeating by night the test previously reported. Leicester and Rutland are conducting comparative tests between their own equipment and police v.h.f. sets from a "dead spot" in Rutland.

On August 24 the Norfolk Group carried out a test exercise with the County Police. It is interesting to compare this with the Essex exercise "Ampol." Not being so well blessed with mobiles the Norfolk group installed portable sets in several police stations, made use of "link" stations where necessary, and sited the control station at Fakenham. Other stations were at Police H.Q. Norwich; (G3IJU/A, G3IOR and G3MPN); East Derham (G3LFU/A, G2YU and G3MWY); Wells-next-Sea (G3DRL/A assisted by D. Youngman), G6ZJ/M, with J. Sutton: G3HRE/M; and G3JNR/P operated in the country around Wells. Except for initial instructions all messages were unknown to the group until received from the police; 1980 kc/s was used as a calling frequency and 1930 kc/s for working. C.C., G3HRK reports that this system worked well and both police and B.R.C.S. observers (who were present at all fixed stations) were well pleased with the results.

The Notts. and Derby Group meeting held at Sutton-in-Ashfield on August 31 was well attended. Co-operation with B.R.C.S. and St.J.A.B. is coming on nicely. Another meeting is to be held on December 7. In Bristol a number of B.R.S. and Associate members are considering ways in which they can help the network. In Berkshire G3ADJ reports that a lively interest is being shown in the newly-formed group, whose activity is supported by Reading A.R.S. Much work is also being done by G3JMJ and G3DXJ. Bingley Group has now commenced regular net schedules for training purposes.

Appointment

Mr. M. N. J. Brundle (G2CPL), 12a Sea Road, Felixstowe, has been appointed County Controller for Suffolk.

Can You Help?

● E. J. Brockway (B.R.S. 21571), 91 Kingston Road, Portsmouth, who would like to hear from a member who has converted the Bendix BSR522 Receiver (100-156 Mc/s) for amateur use?

● C. B. Raithby (G8G1), School House, Martin, Lincoln, who requires the other and any other data on the Portable Dose Rate Meter type 1155B made by E. K. Cole Ltd.?

● W. A. Yeomans (B.R.S. 19618), 13 Council Street, Walton, Peterborough, Northants., who requires modification data for the RU16 T.R.F. Receiver made by Western Electric Co. and the circuit diagram of the R.F. Unit Assembly, Ref. No. 10D/1917?

* 1 Shortbatts Lane, Lichfields, Staffs.

Letters to the Editor...

Neither the Editor nor the Council of the Radio Society of Great Britain can accept responsibility for views expressed by correspondents.

Mobile Rallies

DEAR SIR,—With the 1958 Mobile Rally season drawing to a close it seems opportune to ask what the judges are looking for in their somewhat thankless task when comparing mobile communication installations for the amateur bands installed in and/or built into cars, shooting brakes or vans?

Having had the pleasure of attending very many of the Mobile Rallies held around the country in the past three or four years, I have seen the equipment of most of the competition winners, installed either in the trunk (boot) of the car or under the dashboard. This equipment has been commercially or amateur built or just "surplus" altered to the nth degree, and from bulky to small. What then should we aim at for the future, with safety, while the motor vehicle is in motion, as the primary consideration? Surely the equipment installed in a car should be as compact as possible (as in proved commercial practice) and of modern design, even if home built, whether hidden in the trunk or fixed in part or whole under the dashboard. If so fixed must it extend the whole width of the car? Should not a competitor, however well made the equipment looks, be required to demonstrate that the transmitter will at least function, and that the receiver will receive signals at less than S9, while the car is in motion, and not prevented from receiving signals of lesser strength because of interference caused by the vehicle itself?

Must whip aerials, particularly the long centre loaded ones, be allowed to sway about so much and cause such alarm to, and adverse comment by the other road users and pedestrians? I believe that already mobile rallies are being arranged as part of ORMs, and thus boosting the previous disappointing attendances. I hope before next season it will be possible for matters to be arranged so that a separate rally and a separate ORM not too many miles apart are not held on the same day, as has already happened at least twice this year.

Yours faithfully,
R. F. G. THURLOW (G3WW).

Wimblington, Nr. March,
Cams.

Council Elections

DEAR SIR,—I was very interested to read Mr. W. H. Matthews' letter published in the July BULLETIN.

It has been for some time, a contention of mine, supported by many other members with whom I have discussed this point, that one of the greatest difficulties in our electoral system lies in the attempts of more-or-less unknown members to compete with those more favourably placed in the Society's eye. Mr. Gibbs has suggested the election address as a means of acquiring publicity for one's aims; a scheme which I think has a lot to recommend it. There need be no suggestion of a "lurid" document, or rash promises, but merely a quiet and factual statement of why the candidate seeks election.

I feel that Mr. Matthews has made two inaccurate comments on the position of Council candidates. There is, to my mind, no question of a candidate "getting in" on a particular favour or promise. He must stand (or fall) by his general attitude to the Society and to the members' interests. Similarly there can be no purpose in a member sitting on Council without personal views on important topics, albeit these views need not and must not be irrevocable. The value of debate lies in the ability of the debaters to conceive and present their own views on the debated subject, and it is only fair to the electorate that a candidate should give, and should have chance to give, a statement of his general policy on important topics without resorting to promise or favour.

The scheme of personal contact envisaged by Mr. Matthews

is very sound in principle, and in the course of business trips throughout the United Kingdom, I have endeavoured to meet the local members and determine their views on the running of the Society.

Finally I would appeal to all the membership to make a point of voting in this year's Council election. The important thing is to register a vote for someone, and show that they have some interest in the way in which their National Society is run and their annual 30s. is spent.

Yours faithfully,

R. C. HILLS,

Welwyn Garden City, Herts. B.Sc.(Eng.), Hons. (G3HRH).

The Long Arm

DEAR SIR,—In February, 1958, you published the names of the new members from overseas who had joined in January. In checking the list I found my own call. By a strange coincidence, the only other Ontario member was from Toronto and his name was Dr. Spooner. I did not know of any Spooners living in Toronto and, of course, was quite surprised to see that one was there and was also a "ham." I have been trying to figure out what the odds would be of this happening. Geographically Timmins and Toronto are about 500 miles apart. The coincidence, so far as I am concerned, is not necessarily the two Spooners in the two different cities but the fact that out of all the amateurs joining the Society the only two from Ontario should both be Spooners in the same month without either one knowing of the other's intention.

Yours faithfully,

G. SPOONER (VE3DQL).

Timmins, Ontario,
Canada.

Two Top Band Problems

DEAR SIR,—Can any member answer two problems I have encountered recently?

The first concerns broadcast interference experienced when operating on Top Band. Tuning the transmitter to 1920 kc/s produces a zero beat with the B.B.C. Light programme on 1214 kc/s, on my own and neighbouring receivers. Information obtained indicates that the receivers suffering the interference all have an i.f. of 465 kc/s. How does my 1920 kc/s signal produce a beat with 1214 kc/s and what is the cure?

My second query also relates to transmission on Top Band. It is found that when a 1,000 watt domestic iron is used on the same power point as the transmitter, the p.a. current doubles and the aerial current also shows a marked increase. The aerial in use is tuned against ground and loading is adjusted by a variable inductance. The insertion of the iron has no effect on p.a. tuning or aerial tuning. What causes the substantially increased dissipation and how can the effect be emulated without resorting to the continued use of the XYL's iron?

Yours faithfully,

Dagenham, Essex. RICHARD BOWELL (G3LRL).

Higher Subscriptions Advocated

DEAR SIR,—I should like to make a plea for higher subscriptions.

The Society maintains liaison with the authorities and keeps a never-ending watch on our interests by much unseen work. It secures concessions, and fights for our right to frequencies, often against the vested interests of big business. Those interests would most certainly strangle the life out of our movement were it not for the Society. As it is, the voice of the R.S.G.B. is listened to because it has the authority of an organized body dedicated to Amateur Radio—but all this is done on a miserly "Dickensian" shoe-string budget.

Until recently I kept my wife and three children on a farm wage of £7 a week, and a labourer's wage of £9, yet I have always found the money to pay my share for the work involved in keeping Amateur Radio alive—unlike the minority who contribute not a penny, yet accept the benefits the Society obtains for all of us.

Let us therefore give the Society the monetary backing it needs and deserves. By so doing we shall strengthen our pride in membership and help the Council and Headquarters staff to render even greater service.

Yours faithfully,

J. B. HAMMOND
(B.R.S. 20439).

Kelloholm, By Sanquhar,
Dumfriesshire, Scotland.

Electronic T-R Switches

DEAR SIR,—I came across GM3UU's article in the August BULLETIN with some interest, as I have been using an electronic T-R switch of similar design at my own station for some time with much success.

Basically my circuit is as described, but in order to avoid the need for a broad-band output transformer, output is taken from the cathode of the triode-connected EF50 ("The Cathode-Follower T-R Switch"—W9LSK, QST, May 1956).

Admittedly, no gain can in theory be expected from such a set-up, but in practice I find the increased signal strength and signal-to-noise ratio to be most marked—probably due to improved receiver input matching and to the fact that a step-up in signal voltage appears at the anode end of the transmitter tank coil.

The unit is built into a small metal box and clipped to the side of the transmitter cabinet over a hole through which a short lead connects to the high voltage input condenser.

This satisfying little piece of gear has been in use here for over six months, connected to two 807s with 800 volts on the anodes, and the original EF50 is still surviving.

Yours faithfully,

Castle Eden, Co. Durham.

J. S. TEMPEST (G3GSZ).

Harry Partin says "Thanks"

DEAR SIR,—I cannot leave the U.K. without expressing gratitude to the London Members' Luncheon Club for the hospitality which I have experienced in their midst during the past year and a half.

I should also like to mention particularly G8KS and G3HLS who have gone out of their way to extend friendship to me and to my family. One does not forget the kindness they have shown.

I hope that the concept of "interdependence" between the U.K. and the U.S.A. will soon be extended to include a reciprocal licensing arrangement.

After a year in HB-land I shall be returning to the States where I intend to retain my membership in the R.S.G.B. and to work my share of Gs.

Sincerely yours,

London, S.W.1.

HARRY B. PARTIN (W9JDF).

Membership Appreciated

DEAR SIR,—May I say how much I have valued my membership in the Society and what an honour I feel it is to belong to R.S.G.B. I read with great interest the articles in the BULLETIN, and I observe how not a single word is wasted in it, how each article is presented with clarity and yet in a technical tone worthy of a publication of a professional rather than an amateur nature.

In the same manner as I regard Great Britain as the last bastion of common sense, decency and justice left in this muddled world, so I regard R.S.G.B. as the one pinnacle of good sense left within the ranks of this Amateur Radio fraternity where (especially on this side) so many of us are losing our sense of values.

May the Society go on from strength to strength.

73,

ROLAND C. PEDDLE, JR.

(VO1BD/FP8AY, ex-VO1D).

St. John's, Newfoundland.

The Spirit of Amateur Radio

DEAR SIR,—I have had two very pleasing experiences in connection with my mobile gear which is of U.S.A. origin.

Firstly, through my own fault, I put h.t. through my receiver and burned out the 80 m. coil. I mentioned this during a QSO with W6CZQ in California and within a week the new coils had arrived without any question of payment. Then my rectifier valve which is of a type without substitute here in the U.K. lost its filament. I wrote to Raytheon and got a very nice letter back shortly afterwards, together with two replacements free of charge.

These two incidents make me feel that the spirit of Amateur Radio is very much alive.

Yours sincerely,

Bridlington, Yorks.

W. R. METCALFE (G3DQ).

In Defence of S.S.B.

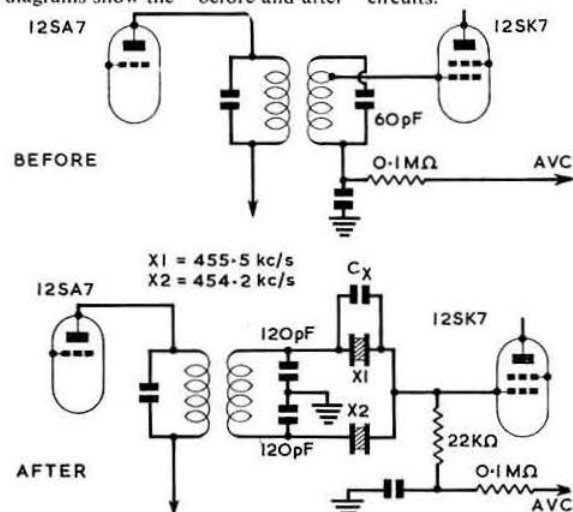
DEAR SIR,—So Dr. Koster, who takes in his stride such varied subjects as hi-fi, high level modulation, f.m. reception, etc. cannot receive s.s.b.!

In order to test his assertion that most a.m. stations are unable to receive s.s.b. I have in the past few days been putting out a few milliwatts of s.s.b. on Top Band, and although only local stations have been contacted, I have not yet found one who did not reply to me and who was not able to receive my s.s.b. signal clearly. In fact, one local station told me my speech quality was better on s.s.b. than the old style a.m. which he had heard from me in the past! This with a total bandwidth of not more than 2,500 c/s.

May I suggest to G3ECA and others a suitable receiver which should not strain anyone's pocket too far. I refer to the TCS12. It is rigidly built, extremely stable, and the b.f.o. has a tuning rate which makes the tuning of a s.s.b. signal comparatively easy.

I believe these receivers have various manufacturers and that there is some difference between the various models, so the details given can only apply to the particular one here (made by Air King Products) but should apply to the others.

The chief modification carried out here was to add a half lattice crystal filter, which is not a difficult job to do. The crystals are surplus Channel No. 46 (455.5 kc/s) and Channel No. 327 (454.2 kc/s) which nicely straddle the i.f. of 455 kc/s. The diagrams show the "before and after" circuits.



The i.f. transformers in this model are made by Sickles and are permeability tuned. Opening up the first i.f. can showed that the fixed capacitor across the secondary was 60 pF \pm 3 per cent so it had the high inductance necessary for the crystal filter. This 60 pF capacitor was removed and replaced by two 120 pF \pm 1 per cent silver micas, as shown in the diagram. The crystals had short lengths of stiff wire soldered to the pins, and were mounted by these leads, side by side, immediately below the i.f. transformer terminals. This method of mounting was found to be quite secure.

Cx is the usual small capacity across the higher frequency crystal and consists of a piece of insulated wire joined to one pin and resting against the length of the other pin. After adjustment it was held in position by a spot of polystyrene cement.

An oscilloscope and wobblator if available will make tuning up simple, but it can be done with a signal generator and output meter and enough patience!

Peaking all the i.f.s to the mid-frequency of the crystal filter should enable a flat topped curve to be obtained; varying Cx will enable a null to be obtained just outside the passband and will steepen the sides of the curve. Too large a capacity will cause large side lobes to appear: quite a small capacity is needed.

Although the receiver as it stands tunes only to 12 Mc/s, it will give the same high stability on the higher frequency bands with crystal controlled converters.

Perhaps those who would not like to dig into a £100 receiver might not feel afraid to "have a go" with one costing only £12 or less.

Yours faithfully,

Bath, Somerset.

L. A. LEAR (G3FIH).

R.S.G.B. Affiliated Societies

THE following are additions to the list published in the May issue.

HARTLEPOOLS AMATEUR RADIO CLUB: F. J. Dodds, c/o Mrs. Featherstone, 3 Cliff Terrace, Hartlepool, Co. Durham.

ILKESTON & DISTRICT AMATEUR RADIO SOCIETY: E. Eric West (G3KTP), 21 Westfield Avenue, Marpool, Heanor, Derbys.

LINCOLN SHORT WAVE CLUB (G3IXH): F. B. Travis (G3BCA), 202 Monks Road, Lincoln.

LOTHIANS RADIO SOCIETY: L. Lumsden, 33 Hillview Drive, Edinburgh 12.

NEWBURY & DISTRICT AMATEUR RADIO SOCIETY: J. A. Gale (G3LLK), Wild Hedges, Crookham Common, near Newbury, Berks.

PRESTON RADIO SOCIETY: G. Lancefield (G3DWQ), 35 Brixton Road, Frenchwood, Preston, Lancs.

R.A.F. (YATESBURY) AMATEUR RADIO SOCIETY (G3HWF): P/O H. Allerston, Officer i/c Amateur Radio Society, R.A.F. Yatesbury, Nr. Calne, Wilts.

ROMFORD RADIO SOCIETY: L. S. Owen (G3MDP), 53 Applegarth Drive, Newbury Park, Ilford, Essex.

BULLETIN REPRINTS

Reprints of the following BULLETIN articles are now available from Headquarters:

"Diagnosis of TVI"

by R. H. Hammons (G2IG) Price 1/- post free

"TVI Can Be Cured"

by H. Whalley (G2HW) Price 1/3 post free

"Curing TVI with Co-axial Stubs"

by T. N. Lloyd (G3SL) Price 9d. post free

The above three reprints may be obtained as a set for 2/6 post free

"Improving the War-surplus HRO Receiver"

by E. H. Trowell (G2HKU) Price 1/- post free

"The R.S.G.B. Two Metre Converter"

by W. H. Allen, M.B.E. (G2UJ) Price 1/3 post free



The annual outing of the Norwich & District, and R.A.F. (Watton) Radio Clubs took place on August 24 in Hunstanton on the Norfolk coast. The prize for the nearest mobile rig went to G3JXF who travelled 90 miles each way to be present. G3JEC operated the control station. In this picture standing left to right: G3SZ, 3JXF, 3HRE, 3JPT, S.W.L., G3HRX, 2UX, 3IOR (dark glasses), S.W.L., Miss G2YU, G2YU. Sitting left to right: G3ANM, 3JEC, 2FT.

R.S.G.B. Regional Representatives

THE following is a list of R.S.G.B. regional representatives and the names of their respective regions:

Region 1.—North Western. B. O'Brien (G2AMY), 1 Waterpark Road, Prenton, Birkenhead, Cheshire.

Region 2.—North Eastern. J. R. Petty (G4JW), 580 Redmires Road, Sheffield 10, Yorkshire.

Region 3.—West Midlands. W. A. Higgins (G8GF), 28 Kingsley Road, Kingswinford, nr. Brierley Hill, Staffs.

Region 4.—East Midland. E. S. G. K. Vance, M.B. (G8SA), 43 Blackwell Road, Huthwaite, Sutton-in-Ashfield, Notts.

Region 5.—Eastern. T. A. T. Davies (G2ALL), Meadow Side, Comberton, Cambridge.

Region 6.—South Central. L. W. Lewis, (G8ML), 117 Fairview Road, Cheltenham, Gloucestershire.

Region 7.—London. F. G. Lambeth (G2AIW), 21 Bridge Way, Whitton, Twickenham, Middlesex.

Region 8.—South Eastern. E. R. Dolman (G2DCG), 20 Canterbury Road, Margate, Kent.

Region 9.—South Western. W. J. Green (G3FBA), 82 Bloomfield Avenue, Bath, Somerset.

Region 10.—South Wales. C. Parsons (GW8NP), 90 Maesycod Road, Heath, Cardiff, Glam.

Region 11.—North Wales. F. G. Southworth (GW2CCU), Samlesbury, Bagillt Road, Holywell, Flintshire.

Region 12.—East Scotland. A. G. Anderson (GM3BCL), "Helford," Pitfodels, Aberdeen.

Region 13.—South-East Scotland. G. P. Millar (GM3UM), 8 Plewlands Gardens, Edinburgh 10.

Region 14.—West Scotland. D. W. R. Macadie (GM6MD), 154 Kingsacre Road, Glasgow, S.4.

Region 15.—Northern Ireland. J. William Douglas (G13IWD), 54 Kingsway Park, Cherryvalley, Belfast, Northern Ireland.

Region 16.—East Anglia. H. H. Lowe (G2HPF), "Akabo," Main Road, Boreham, Chelmsford, Essex.

Region 17.—Southern. M. P. Nicholson (G2MN), Ranworth, South Leigh Road, Warblington, Havant, Hants.

R.S.G.B. QSL Bureau Sub-Managers

THE following is a list of the R.S.G.B. QSL Bureau Sub-Managers showing the call-sign groups for which they are responsible:

G2 and DL2 calls:

G. Verrill (G3IEC), 10 Seahorse Street, Gosport, Hants. (Certificates Manager).
P. Jones (G3ESY), 94 Holme Lacy Road, Hereford.

G3, 4 and 5 two-letter calls & GC

A. J. Matthews (G6QM), 62 Ashlands Road, Hesters Way Estate, Cheltenham.

G6 calls:

A. W. Gover (G4AU), 20A, Cambridge Road, Bromley, Kent.

G8 calls:

M. Hassall (G3EMD), 99 Shenstone Valley Road, Quinton, Birmingham.

G3AAA-BZZ:

C. A. Bradbury (B.R.S. 1066), 13 Salisbury Avenue, Cheltenham.

G3CAA-DZZ:

W. J. Green (G3FBA), 82 Bloomfield Avenue, Bath.

G3EAA-HZZ:

W. J. Green (G3FBA), 82 Bloomfield Avenue, Bath.

G3IAA-KZZ, B.R.S. and A numbers

C. Usher (G2CCD), 24 Carlisle Road, Dartford, Kent.

G3LAA-NZZ:

G. C. Voller (G3JUL), 13 Marlborough Road, Ashford, Middlesex.

GD calls:

T. R. Moore (GD3ENK), "Glyn Moar," St. John's, Isle of Man.

GI calls:

W. H. Martin (G15HV), "Swallow Lodge," Greenisland, Co. Antrim, Northern Ireland.

GM calls:

D. Macadie (GM6MD), 154 Kingsacre Road, Glasgow, S.4.

GW calls:

J. L. Reid (GW3ANU), 28 Walterston Road, Gabalfa, Cardiff.

Envelopes for the collection of cards should be sent direct to the Sub-Manager concerned and not to the QSL Manager (Mr. A. O. Milne). Outgoing cards should not be sent to the Sub-Manager unless they are in the call-sign group for which he holds envelopes. For example, the holder of G3J-- call may send cards for calls in the series G3IAA-G3KZZ to his own Sub-Manager, together with envelopes for the collection of cards, but he should not send to him cards in any other call-sign series. Sending cards for general distribution to the Sub-Managers only involves the cards in delay and the Society in needless expense. Mr. Milne's address is 29 Kechill Gardens, Bromley, Kent.

LONDON MEMBERS' LUNCHEON CLUB

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

at 12.30 p.m. on Friday, October 17 and November 21, 1958

Telephone table reservations to HOL 7373 prior to day of luncheon.

Visiting amateurs especially welcome.

Regional and Club News

Acton, Brentford and Chiswick.—Morse practice for new members continues to be given every Tuesday at the Club Room, 66 High Road, Chiswick, W.4, commencing at 7.30 p.m. On October 21, G5LQ will lecture on low power working. *Hon. Secretary:* W. G. Dyer (G3GEH) 188 Gunnersbury Avenue, Acton, W.3.

Aldershot and District Amateur Radio Society.—The autumn session is now in full swing with preparations for forthcoming contests plus a programme of demonstrations of members' equipment and the final efforts for the Frost Award Competition. Meetings are at fortnightly intervals on Wednesdays at The Cannon, Aldershot. *Hon. Secretary:* S. E. Hume, 25 Kingsway, Aldershot.

Bradford Amateur Radio Society.—The new session opened with lectures by G3KLZ ("Fault Finding Made Easy"), and G3LZW ("High Quality Sound Reproduction"). Meetings are held on alternative Tuesdays at 7.30 p.m. at 66 Little Horton Lane, Bradford 5. *Hon. Secretary:* David M. Pratt (G3KEP), 27 Woodlands Grove, Cottingley, Bingley, Yorks.

Cornish Radio and Television Club.—Members of the Cheshire Foundation were present at a well attended meeting of the Club held at the Cornwall Technical College, Trevenson, Redruth, on September 3. At this meeting G3CZZ continued his transistor lecture after which members were shown round the laboratories. The Club ran a station from the Model Engineering Exhibition at Redruth from August 30 to September 6. Visitors to the Club stand included H.R.H. Prince Chula of Thailand. Another move towards the setting-up of a Cheshire home station was the gift of an HRO receiver from a member who wishes to remain anonymous. *Hon. Secretary:* J. Brown (G3LPB), Marlborough Farm, Falmouth, Cornwall.

Dorking & District Radio Society.—The Society will meet during the winter months at the Star and Garter Hotel, Dorking on the second and fourth Tuesdays at 8 p.m. *Hon. Secretary:* J. E. Greenwell (G3AEZ), Wigmore Lodge, Bear Green, near Dorking, Surrey.

East Kent Radio Society.—Meetings are held every Tuesday at the Canterbury Technical College from 7.15 p.m. A course of lectures in preparation for the R.A.E. is being given by G3MDO; G3LIG and G3MDT are giving Morse tuition. The Club station (G3LYT) will soon be in operation. *Hon. Secretary:* D. N. T. Williams, Llandogo, Bridge, near Canterbury.

Exeter.—Arrangements are being made to acquire suitable premises for meetings. The following have been elected to serve on the Group Committee: G3HTA (*Chairman*); G3MCJ (*Hon. Secretary*); A1420 (*Hon. Treasurer*); G2CFI (*Experimental Manager*); A1462 (*Listener's Representative*).

Flintshire Radio Society.—The new session started on September 1 with a talk on 2m work. Members visited the Methane Gas Plant and Power Station at Point of Ayr, on September 15. The Society meets at the Railway Hotel, Prestatyn, on alternate Monday evenings. *Hon. Secretary:* J. Thornton Lawrence (GW3JGA/T), 9 East Avenue, Bryn Newydd, Prestatyn.

Grafton Radio Society.—At the A.G.M. held on September 12, 1958, J. H. Clarke, G2AAN, was re-elected President. A. W. H. Wennell (G2CJN) is now combining the office of *Hon. Secretary* with that of *Hon. Treasurer*.

Grimsby Amateur Radio Society.—An Amateur Radio station using the call GB3GY will operate from the Grimsby Model Engineers Exhibition during the period October 21 to 25. Operation will be on 1.8, 7 and 21 Mc/s and QSLs will be sent to all stations worked.

Halifax & District Amateur Radio Society.—At the meeting held on September 2, old-timer Mathew Eskdale, G2SU, of Bradford, gave a talk entitled "Why I Became a Radio Amateur." The Society is collaborating in a course of instruction for the R.A.E. at the Halifax Technical School. *Hon. Secretary:* A. Robinson (G3MDW) Candy Cabin, Ogden, Halifax.

Liverpool & District Amateur Radio Society.—Having lost its previous meeting place at the Wavertree Community Centre, the Society is now installed at the Salisbury Mission Hall, Childwall, where meetings are held on Tuesdays at 7.30 p.m. The Worked Liverpool Award, instituted last year, has proved popular, 15 certificates having been issued so far with many more claimants in the offing. The Society took part in the Region 1 Field Day on August 31 and have hopes of being near the top when the results are announced.

Lothians Radio Society.—At the meeting on October 23, GM3HOQ will give another of his entertaining talks, illustrated by tape recordings. Two weeks later, on November 6, GM3KIG will describe his experiences over a period of three years using five watts input. Both meetings will be at 25 Charlotte Square, Edinburgh, commencing at 7.30 p.m. On November 5, a party will be taken behind the scenes at the S.T.V. studios in Glasgow. Further details can be obtained from the *Hon. Secretary:* L. Lumsden, 33 Hillview Drive, Edinburgh 12 (Cor. 1435).

Newbury & District Amateur Radio Society.—A Hamfest will be held on Sunday, October 19 in Elliotts' canteen, West Street, Newbury. Tickets, price 7s. 6d. each, can be obtained from the *Hon. Secretary:* J. A. Gale, Wild Hedges, Crookham Common, near Newbury, Berks. During the Hamfest, G3IPR/A will be operating from Elliotts on Top Band. Eric Smith (G3JMT) is due to talk to the Society on October 31. His subject will be "Modern Transmitter Design and Construction." Meetings are normally held at Elliotts on the last Friday in each month when visitors and new members are always welcome.

Southgate & Finchley.—Amateur Radio stations operated by Group members at the Friern Barnet and Wood Green Shows aroused much interest. Three members of the Group who sat the May R.A.E. are



G16YM, station of the City of Belfast Y.M.C.A. Radio Club, at the Model Engineers' Society (N.I.) Exhibition held in the Wellington Hall, Belfast recently. From left to right are J. Moss, Editor of the Club Magazine Y. Emmer, S.W.L. G. Ervine and G12DZG. Back to camera is G13MBB. The equipment used included Minimitter and Panda Cub transmitters and an Eddystone "888" receiver.

now licensed as G3MWF (Roy Marden), G3MWG (David Bootman) and G3MXQ (Jack Smith). The latter succeeded in getting the Fordson gang mower, used for cutting the grass in the park at the bottom of his garden, suppressed! He remembered that G6CL is Chairman of the Parks Committee in Southgate!

Stockport Radio Society.—Protective Devices for High Power Circuits, "Radio Maths" and "Silicon Diodes" were subjects of recent lectures. Attendances have been good and many new members have been enrolled. Participation in the Region 1 Field Day proved to be a disappointment due to faulty gear. *Hon. Secretary:* G. R. Phillips (G3FYE), 7 Germans Buildings, Buxton Road, Stockport.

Tees-Side Amateur Radio Club.—During the last week of August the Club operated with great success three Amateur Radio stations from the site of the Middlesbrough Horticultural and Handicrafts Show. G3LXG, G3KBD and G3AWL loaned transmitters. Meetings are due to be held at Settlement House, Newport Road, Middlesbrough at 8 p.m. on November 7 and 21. *Hon. Secretary:* A. L. Taylor (G3JMO), 12 Endsleigh Drive, Acklam, Middlesbrough.

Torbay Amateur Radio Society.—The September meeting took the form of an Extraordinary A.G.M. in order to permit alterations to standing rules and regulations. This necessity arose as premises have been taken for a club headquarters, in Belgrave Road, Torquay. The meeting gave its unanimous approval to this project. It is anticipated that a club station will soon be in use at the new H.Q.s. G3ABU recently lectured on "What is a Good Receiver."

West Lancs. Radio Society.—During the recent 21st anniversary celebrations of the Borough of Crosby, the Rotary Club organized a "Crosby at Leisure" Exhibition. The Society participated and established a "Top Band" transmitter in the Exhibition Hall, using the call G3IZT/A. New accommodation was recently acquired at "Colonsay" Crosby Road South, the garden of which offers scope for the erection of a good aerial. A programme of lectures is being prepared, commencing with

"An Introduction to Receiver Alignment" by G3FZG. Construction nights for younger members are planned and a technical panel is being set up. *Hon. Secretary:* A. Crighton, 77 Myers Road West, Crosby.

Representation

Mr. F. N. Kendrick (G3CSG) has resigned as Area Representative for Wirral (Cheshire). Nominations for his successor should be made in the prescribed form and sent to reach the General Secretary, by not later than November 30, 1958.

Mr. A. H. Kightley, Town Representative for Dunfermline and District, now holds the call sign, GM3MZZ.

Trade Notes

PANDA MFG. CO., 1 Great George Street, Rochdale, Lancs., have taken over the technical and productive staff of Panda Radio Co. Ltd. (in voluntary liquidation). Equipment formerly made by Panda is now in production at the above address.

Silent Key

BERNARD WHITEHOUSE (G6WF)

It is with deep regret that we record the death on September 11, 1958, of Bernard Whitehouse (G6WF) of Wombourn, near Wolverhampton. Licensed in 1923, Bernard was well-known both locally and in the DX field. He was a keen experimenter on all bands and his exuberant personality endeared him to all who came into contact with him. He was a keen member of the Stourbridge & District Amateur Radio Society and was at one time a member of the Wolverhampton Amateur Radio Society. To his widow and parents we extend our sympathy in their great loss.—W. A. H.

Slow Morse Practice Transmissions

G.M.T.	Call-sign	kc/s	Town
Sundays			
08.00	G3BHS	1810	Southampton
09.00	G3GYV	1900	Hartford, near Northwich
09.30	G3BKE	1900	Newcastle-on-Tyne
10.15	G3FBA	1910	Bath
11.00	G2FXA	1900	Stockton-on-Tees
11.30	G3JDO	1900	Hebburn-on-Tyne
12.00	G3LP	1850	Cheltenham
12.00	G15UR	1860	Belfast
15.00	G3LEQ	1990	Tunbridge Wells
15.00	G3LKG	1850	Ilkeston, Derby
19.00	G3MRA	1810	Southampton
20.30	G3HTA	1850	Exeter
21.00	G2FIX	1812	near Salisbury
21.00	G3LZW	1900	Shipley, Yorks.
Mondays			
18.30	G3NC	1825	Swindon
19.00	G3KTP	1850	Heanor, Derby
19.00	G3LMT	1850	Exeter
19.00	G3MDH	1860	Southampton
20.00	G3BHS	1810	Southampton
20.30	G3AGN	1875	Felixstowe
20.30	G3LSF	1900	Southport
21.00	G3LZW	1900	Shipley, Yorks.
Tuesdays			
18.30	G2FXA	1900	Stockton-on-Tees
19.00	G3JLS	1810	Southampton
20.00	G3BHS	1810	Southampton
20.00	G2FCI	1850	Exeter
21.00	G3EFA	1855	Southport
21.00	G3LZW	1900	Shipley, Yorks.
21.15	G2CPL	1875	Felixstowe
21.45	G2UK	1875	Lowestoft
Wednesdays			
19.00	G3LZC	1830	Heanor, Derby
19.00	G3HUB/A	1902	Chelmsford
19.00	G8RQ	1850	Chesterfield
19.00	G3ION	1810	Southampton
20.00	G3BHS	1810	Southampton

G.M.T.	Call-sign	kc/s	Town
Wednesdays			
21.00	G3LZW	1900	Shipley, Yorks.
22.00	G3JJC	1990	S.E. London
Thursdays			
18.30	G3NC	1825	Swindon
19.00	G3LXL	1850	Nottingham
19.00	G3MCL	1810	Southampton
20.00	G3BHS	1810	Southampton
20.00	G2ABR	1919	Hull, Yorks.
20.00†	G3FCY		
21.00	G3GWT		
21.00	G3KTO		
20.30	G3GDZ	1910	Kingsbury, N.W.9
21.00	G3LZW	1900	Shipley, Yorks.
21.30	G3HMY	1850	Exeter
22.00	G3JIT	1990	S.E. London
22.00	G3JKY	1985	Beckenham, Kent
Fridays			
19.00	G3IXN	1810	Southampton
19.30	G3KSF		
19.30	G3FUA	1850	Kilburn, Derby
19.30	G3MHR	1850	Swanwick, Derbys.
20.00	G3BHS	1810	Southampton
20.30	G3ICX	1915	Sutton Coldfield
21.00	G3LZW	1900	Shipley, Yorks.
21.30	G3MGS	1970	Chislehurst
21.30†	G3KLZ	1900	Bradford
22.00	G3INW (or G3KSS)		Bradford
22.00	G3KYU	1859	Bournemouth
Saturdays			
08.00	G3BHS	1810	Southampton
13.00	G2FXA	1900	Stockton-on-Tees
19.00	G3MCL	1810	Southampton
21.00	G3LZW	1900	Shipley, Yorks.

† Alternately.
* Slow Morse QSO.

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, wherever possible, details of the lecture or other event being arranged.

REGION 1

Bury (B.R.S.).—November 11 ("Single Sideband," R. H. Hamman, G2IG), 8 p.m. George Hotel, Kay Gardens.
Liverpool (L. & D.A.R.S.).—Tuesdays, 8 p.m. Gladstone Mission Hall, Queens Drive, Stonycroft.
Manchester (M. & D.R.S.).—December 1, 7.30 p.m., Brunswick Hotel, Piccadilly (A.G.M.).
Preston (P.A.R.S.).—October 15 (Opening of Hobbies Exhibition), October 29 (Visit to Rediffusion at Inskip, near Preston).
Stockport (S.R.S.).—October 22 (Hot Pot Supper), November 5 (Open Forum), November 19 ("D.C. Amplifiers"), 8 p.m. Blossoms Hotel, Buxton Road.
Wirral (W.A.R.S.).—October 17, 8 p.m., 4 Hamilton Square, Birkenhead. ("Stabilized and Variable Voltage Power Packs," by H. Schroeder).

REGION 2

Cleckheaton (Spenn Valley).—October 29, 7.30 p.m. ("The Explorer Transmitter," by P. and A. Mfg. Co.), George Hotel, Cleckheaton; November 12, 7.30 p.m. (Mullard Meeting and Film Show, St. George's Hall Bradford.)

REGION 3

Birmingham (M.A.R.S.).—October 21, 7.30 p.m., Midland Institute, Paradise Street.
Coventry.—October 24, 7.30 p.m., Vine Street Schools.
Stourbridge & District.—October 17, 8 p.m., White Horse, Amblecote, November 4, 8 p.m. (Talk or Film), Brotherhood Hall, Scotts Road.
Slade.—October 24, 7.45 p.m. ("D.F. on a Bicycle," by N. B. Simmonds); November 7, 7.45 p.m. ("Electronics in Hospital," R. Lightwood, Dept. of Surgery, Queen Elizabeth Hospital), Church House, High Street, Erdington.

REGION 4

Derby (D. & D.A.R.S.).—October 15, 22, 29 (B.E.D.A. Films); November 5 (Auction Sale); November 12, 19 ("For the Beginner"), 7.30 p.m., Room 4, 119 Green Lane, Derby.

REGION 5

Cambridge (C. & D.A.R.C.).—October 17 ("1 Visited America," R. F. G. Thurlow, G3WW); October 31 (Junk Sale), 7.45 p.m., "Jolly Waterman," Chesterton Road, Cambridge.

REGION 7

Acton, Brentford & Chiswick.—October 21 ("Low Power Contest Working," by G5LQ); November 18 ("Hints & Tips," by G4LS), 7.30 p.m., A.E.U. Rooms, 66 High Road, Chiswick.
Dorking (D. & D.R.S.).—October 28, 8 p.m. Star & Garter Hotel, Dorking. (Film Show).
Ealing.—Sundays, 11.30 p.m., A.B.C. Restaurant, Ealing Broadway, W.4.
East London.—October 19, 2.30 p.m. Lambourne Room, Town Hall, Ilford, Essex. ("Two Metre Converters," by J. R. Gazeley).
East Molesey (T.V.A.R.T.S.).—November 5. Carnarvon Castle Hotel, Hampton Court. (Talk by Comdr. N. de G. Waymouth, representative of British Schools Exploring Society).
Guildford & Woking.—October 24, 7.30 p.m. "The Cannon," Portsmouth Road, Guildford ("Methods of Tracking Interference and Piracy," by T. A. Bell, ex-Radio Branch, G.P.O.).
Harlow & District.—Tuesdays, 7.30 p.m., Rear of G. E. Read (G3ERN), Harlow.
Holloway (G.R.S.).—Mondays and Wednesdays (R.A.E. & Morse) Fridays (Club), 7 p.m., Montem School (ex Isledon School), Hornsey Road, N.7.

Ilford.—Thursdays, 8 p.m. G2BRH, 579 High Road, Ilford. (Discussion).
Kingston.—Thursdays, 8 p.m., 5 Penrhyn Road, Kingston. (Theory and Morse Classes).
Norwood & South London.—November 4 (R.A.E. & Morse), 7.30 p.m., Windermere House, Westow Street, Crystal Palace.
Romford (R.D.A.R.S.).—October 21 (Television Servicing Demonstration); November 4 ("Overseas Communication," by L. Parnell, G8PP); November 11 (Junk Sale); November 18 (Annual Dinner and Ladies' Night), 8.15 p.m., RAFA House, 18 Carlton Road, Romford, Essex.
Sutton & Cheam.—October 1, 8 p.m., "The Harrow," Cheam. ("The Vanguard Transmitter and Multiband Aerial," R. G. Shears, G8KW).
Welwyn Garden City.—November 13, 8 p.m., I.C.I. Recreation Club, Blackfan Road, Welwyn Garden City. "Stereophonic Sound" demonstration by Pye-Nixa Records. (Open Meeting for Home Counties Groups & Clubs).

REGION 9

Bath.—November 10, 7.30 p.m., 12 James Street West, A.G.M. (Junk Sale).

Bristol.—October 17, 7.15 p.m., Carwardine's Restaurant, Baldwin Street ("TVI and its Suppression," P. W. Crouch, G3GBK, and M. A. Pearce).

Torquay.—November 8, 7.30 p.m., Y.M.C.A., Castle Road ("12cm Transmission and Reception," Part II, W. Sydenham, G5SY).
Weston-super-Mare.—November 12, 7.30 p.m., Albert Hotel ("Telemetrics," by J. Smith, G3HSR).

REGION 10

Port Talbot.—November 4 (Discussion on N.F.D. 1958); November 18 (R.A.E. Instruction); December 2 (Film Show); December 16 (R.A.E. Instruction), 7.30 p.m., Talbot Hotel, Taibach, Port Talbot.

REGION 11

Prestatyn (F.R.S.).—November 3 (Film Show), December 1 ("Getting the Best from Your Receiver," J. T. Lawrence, GW3JGA/T), 7.30 p.m., Railway Hotel, Prestatyn.

REGION 12

Aberdeen (A.A.R.S.).—October 17 ("Basic Valve Circuits" and "Magnets and Magnetic Materials"), October 24 (Sale of Radio Gear); October 31 (A.G.M.), 7.30 p.m., 6 Blenheim Lane, Aberdeen.
Aberdeen.—October 25, 2 p.m. Region 12 O.R.M. at Ardor House Hotel.

REGION 14

Falkirk.—October 24, 7.30 p.m., Temperance Cafe, Falkirk.
Glasgow.—October 31, 7.30 p.m., Christian Institute, 70 Bothwell Street, Glasgow C.2 ("V.H.F. Night," by R. Hammond, GM31NK).

DATES FOR YOUR DIARY

1958

October 24.—London Lecture Meeting.
November 14.—London Lecture Meeting.
November 26-29.—Radio Hobbies Exhibition, Royal Horticultural Society's Old Hall, London.
December 12.—Annual General Meeting.

1959

January 23.—Presidential Address.
February 27.—London Lecture Meeting.
March 20.—London Lecture Meeting.
April 12.—Blackpool O.R.M.
April 26.—North Midlands Mobile Rally.
London Lecture Meetings are held at the Institution of Electrical Engineers.

Scottish Regional Meetings

SATURDAY, OCTOBER 25, 1958

ARDOE HOUSE HOTEL,
ABERDEEN

Programme

Assemble	- - - -	2.0 p.m.
Business Meeting	- - - -	2.30 p.m.
Tea (informal)	- - - -	4.30 p.m.
"On the Air" Demonstration of Three Band Quad Aerial-		5.0 p.m.
Dinner	- - - -	7.30 p.m.

Tickets for Dinner only (12/6 each) are available from A. G. Anderson, (GM3BCL), "Helford," Pitfodels, Aberdeen or G. M. Jamieson, (GM3HTL), 93 Cragton Road, Aberdeen.

SUNDAY, OCTOBER 26, 1958

CARLTON HOTEL
NORTH BRIDGE, EDINBURGH

Programme

Assemble	- - - -	2.30 p.m.
Business Meeting	- - - -	3.0 p.m.
High Tea and Informal Discussions	- - - -	5.0 p.m.

Tickets for High Tea (10/6 each) are available from George Millar (GM3UM), 8 Plewlands Gardens, Edinburgh, 10, or from local representatives.

★ ★ ★

The Council will be represented at both meetings by Messrs. L. E. Newnham, G6NZ (President) and N. Caws, G3BYG (Honorary Treasurer).

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THE following were elected to membership at recent meetings of the Council.

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G3AWS A. W. Summers, Apartment 101, The White House, Albany Street, London, N.W.1.
G3CZS A. W. S. Whately, 74 Barnfield Avenue, Allesley, Coventry, Warwick.
G3IMP S. Poole, Brookside, Marston Road, Croft, Nr. Leicester.
G3ISB C. J. Brock, 33 Willoughby Place, Rugby, Warwick.
G3LDO P. G. Dodd, Radio Servicing Flight, R.A.F. Station, Dishforth, Thirsk, Yorks.
G3LKH A. R. Allwright, 43 Grand Parade, Brighton, Sussex.
G3MFU R. W. R. Findlay, 71 Durham Road, East Finchley, London, N.2.
G3LUA A. G. Knowles, 104 Tetley Road, Hall Green, Birmingham 11.
G3MBQ S. J. Scarbrough, 25 Crawshaw Avenue, Sheffield 8, Yorks.
G3MCF J. Wilson, 11 Applegarth Lane, Bridlington, Yorks.
G3MGK I. A. Kemp, 1 Doric Avenue South, Frodsham, via Warrington, Lancs.
G3MHY R. Morris, 22 Rostwaite, Wellington, Shropshire.
G3MLD K. W. Darby, 74 Milstead Road, Birmingham 26, Warwick.
G3MMP R. J. Arthy, 28 Rosecroft Walk, Pinner, Middx.
G3MMV J. B. McGuire, 754 Windmill Lane, Denton, Manchester, Lancs.
G3MOJ A. R. W. Cake, 31 Ackerman Road, Dorchester, Dorset.
G3MQJ J. F. Macaulay, 22 Ryfold Road, Wimbledon Park, London, S.W.19.
G3MSI D. P. Giddens, 60 Welsh Walls, Oswestry, Shropshire.
G3MSS J. Savage, 15 Norfolk Road, Uxbridge, Middx.
G3MSV A. D. Bishop, Yew Cottage, Hollington, Woolton Hill, Nr. Newbury, Berks.
G3MTI A. D. Smith, 42 Wyche Road, Gt. Malvern, Worcs.
G3MUT C. G. Tomkinson, 367 Chester Road, Hartford, Northwich, Ches.
G3MVM P. B. K. Pierson, 28 Gordon Hill, Enfield, Middx.
G3MWQ *P. J. Groves, 53 Hemming Street, Kidderminster, Worcs.
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32.6	36.3	36.5	36.7	

TYPE FT 241A 465 Kc/s 2 pin 12/6 each.

FT241A—54th HARMONIC (In steps of 100 kc/s).
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150 Kc/s.	Two Pin Round	12/6
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200 Kc/s.	FT241A	10/-
500 Kc/s.	FT241A	7/6
500 Kc/s.	Two Pin 10X	15/-
500 Kc/s.	Brook's	15/-
2500 Kc/s.	Octal	12/6
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15,010 Kc/s.	16,135 Kc/s.	16,435 Kc/s.	18,025 Kc/s.
15,110 Kc/s.	16,335 Kc/s.	16,700 Kc/s.	18,125 Kc/s.

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MARCONI, S.T.C. 2 PIN 10X FUNDAMENTALS IN KILOCYCLES

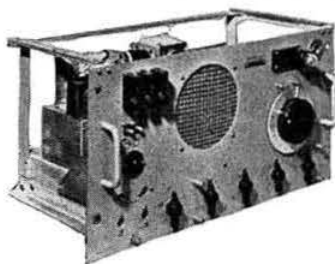
1183	1674.9	2261	10,433	11,751
1205	1680	2295	10,445	11,788
1324.5	1680.5	2312	10,488	11,814
1352.5	1700	2315	10,501	11,851
1384	1727	2430	10,511	11,876
1405	1740	3270	10,534	12,685
1408.5	1764.5	3310	10,545	
1550.62	1775	3317.5	10,557	
1554.4	1780	3390	10,567	
1561.1	1815	3440	10,622	
1565.62	1875	3630	10,755	
1655.75	1930	3850	10,767	
1570	1981	3920	10,800	
1570.75	2055	4210	10,823	
1572.5	2065.75	4860	10,856	
1575	2067.5	10,166	10,878	
1588.68	2087.5	10,189	11,437	
1613.25	2089	10,233	11,501	
1650	2118.25	10,245	11,526	
1668.2	2196	10,300	11,587	

7/6
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INTERMEDIATE FREQUENCY 2 MC/S.



Complete with 6 valves, 2-6K8G, 2-EF39, 6Q7G and 6V6G. Internal mains and 6v. vibrator pack. Built-in 6 1/2" P.M. speaker. Muir-head slow motion drive. B.F.O. and R.F. stage. Provision for 'Phones and Muting and 600 ohms line. Input, 100/250v. A.C. or 6v. D.C. All sets in new condition and air tested.

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A good scope basis Carriage 5/-

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5X4G 10/6	6D6 6/6	6SN7GT 7/6	12BA6 9/-	31 7/6	CV63 10/6	EC62 5/6	RF97 7/6	KT63 7/6	PCF97 12/6	U48 10/6	VR150/30
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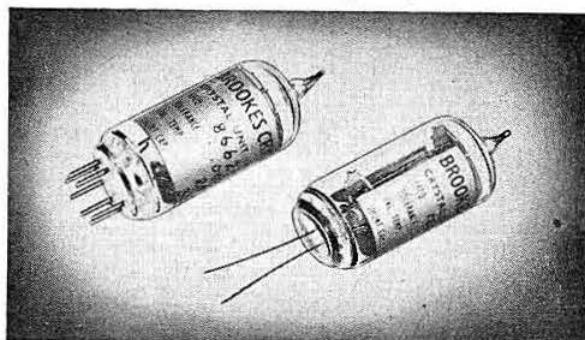
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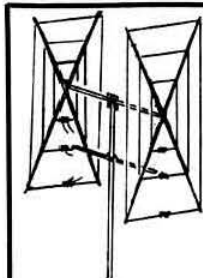
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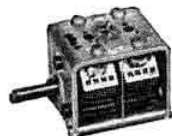
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(Continued on page 200)

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