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JUNE, 1959

BULLETIN

2/6 Monthly

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

VOL. 34, NO. 12

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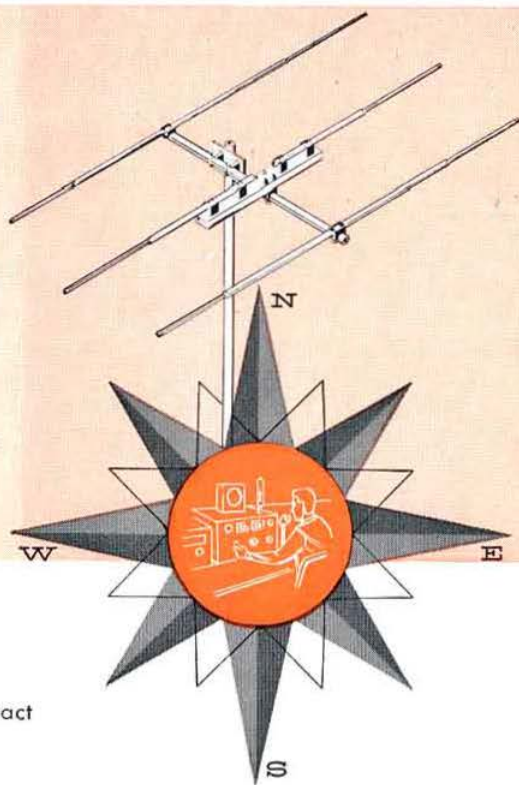
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Suitable for conversion to 2 metre, FM, or Wrotham transmissions. Valves: Four EF.50; One EL.32; Two EF.39; One EBC.33; One EA.50. Complete with circuit diagram. £15.0 Plus 3/6 packing and carriage.

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Extremely compact five stage unit of modern design tuning 124.5-156 Mc/s. Comprises RF Amplifier, Frequency changer, Crystal oscillator trebler, Trebler, and Doubler, with 2 EL 91 miniature output pentodes and three special quality EF91 RF pentodes. Slug tuned coils directly mounted on fully plated five section tuning capacitor with five ceramic block air dielectric trimmer capacitors. Co-ax aerial input to RF stage and co-ax output for IF stage. Ceramic socket for crystal input LT, HT, and gain control bias to miniature Jones plug. Ideal for 144 Mc/s Band. Brand New. 27/6 post free.

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Modern miniature unit associated with and similar to the type 373 9-72 Mc/s i.f. strip. Only 5½ in. long x 3 in. wide x 3 in. high with four screened B7G valves. Co-axial socket input to balanced primary of mu-metal microphone transformer with output from resistor bridge in secondary circuit for muting associated receiver. Microphone amplifier is a Brimar 9D6 variable-mu h.f. pentode RC coupled to a 7D9 pentode which feeds the centre tapped input transformer of two 6C4 triodes in push-pull. Output from substantial modulation transformer having alternative tap on secondary winding. Additional winding on input transformer provides output through co-ax for phone monitoring. Outputs and 6-3 and 250 volt inputs through short cable terminating in miniature multi-plug. New, complete with 4 valves. £1, post free.

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Ex U.S. Government warning bells with twin solenoids driving a fast acting piston which strikes the rim of a chromium plated gong. The 12 volt solenoids are series wired for 24 volt d.c. operation, but 6 volt will ring bell if wiring is re-arranged to give parallel feed. Solid cast baseplate for three screw fixing to rear of door, etc. Brand new. 5/- plus 1/- postage.



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TS.61/AP. For 3140-3360 Mc/s

BRAND NEW hand-tuned resonant cavity accurate to within 10 Mc/s. Relative power and resonance indicated on microammeter. £3.10.0 Plus 7/6 packing and carriage.

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TS.110/AP. ECHO BOX

As TS.61/AP. but covering lower frequency range. £3.10.0 Plus 7/6 packing and carriage.

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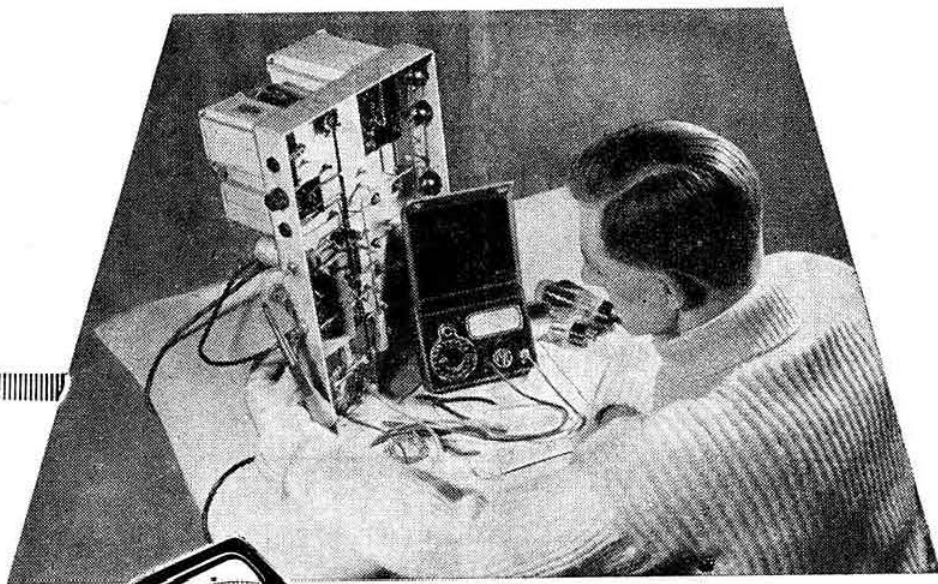
All mounted on 3 x 6½ in. insulated base. Contains Admiralty pattern key, with variable return pressure and adjustable front and back stops to suit operator's "hand"; a 1000 ohm earphone which can serve as the sounder of a remote buzzer (not supplied); a two-pin, small-bayonet-cap lamp or neon bulb holder; and small round single pole on/off switch; all wired in base to four substantial terminals opposite three way cable clamp at front of block. A useful piece for the parts alone at 7/- post free.

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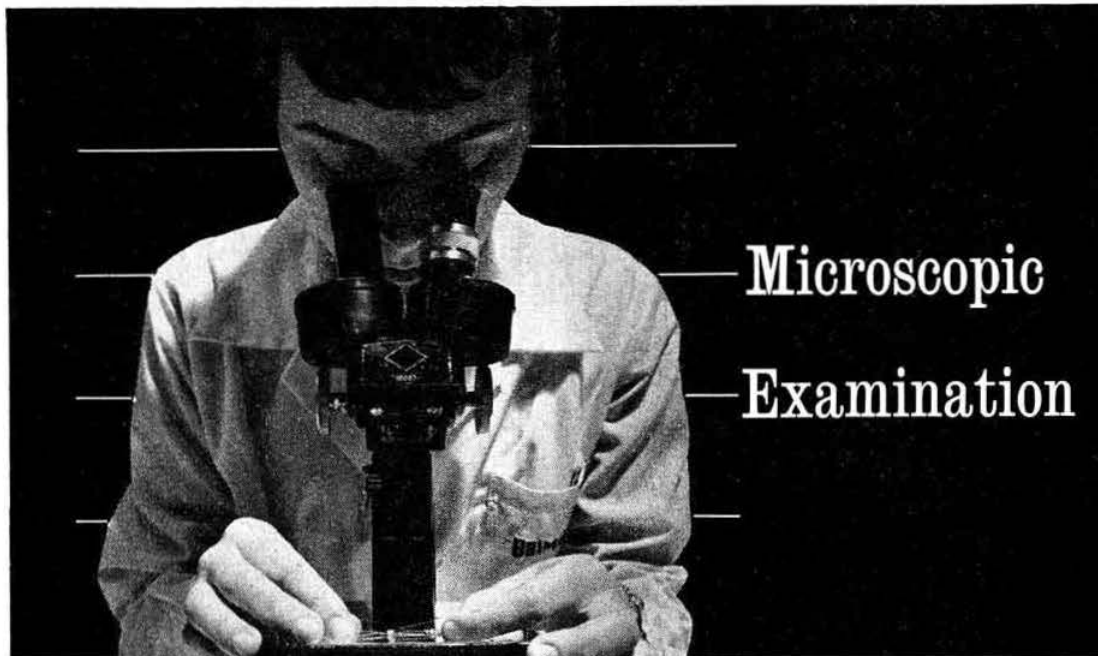
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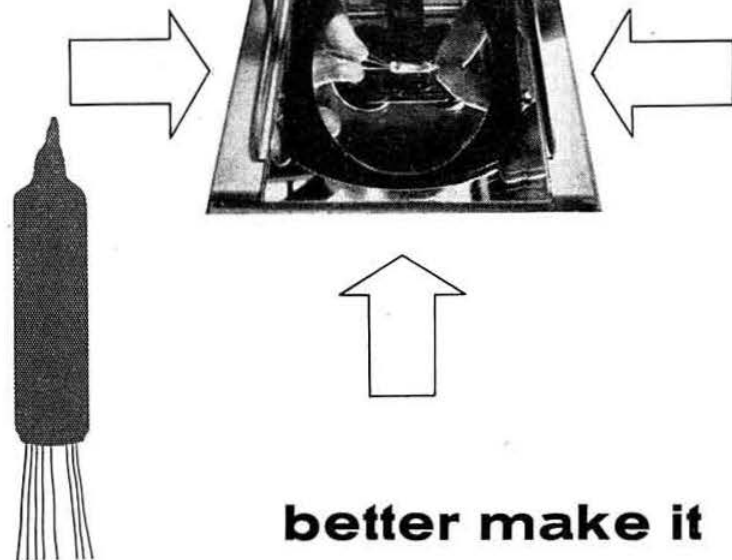
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Three-channel crystal control receiver working on 332.6; 333.8 and 335 Mc/s. Includes 28D7; 2-12SN7; 7-6AJ5; 12SR7. Relay's, etc. Input 24 to 28 volts D.C. Only 59/6, p.p. 5/-.

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Type 25. Switched tuning 30 to 40 Mc/s. Includes: 3-SP61, etc., 10/-, carriage 2/6. Circuit 9d.
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- ★ 4-Channel Crystal Controlled
- ★ 100 to 120 Mc/s Coverage
- ★ 9-72 Mc/s IF
- ★ 40 kc/s Bandwidth

Unit complete with 21 valves; crystal; 24 volt rotary power unit, etc., in metal case. In new condition with full circuit diagram.

£8/19/6. Carriage 10/6.

Circuits separately, 1/9 post free.

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- ★ 10-Channel Crystal Controlled
- ★ 124.5 to 156 Mc/s Coverage
- ★ 9-72 Mc/s IF
- ★ 23 kc/s Bandwidth

Sub-units	Type	With valves	Less valves	P.P.
TRANSMITTER	81	75/-	25/-	2/6
RECEIVER	114	27/6	7/6	2/6
IF Amplifier	476	37/6	12/6	2/6
Modulator	105	20/-	—	2/6
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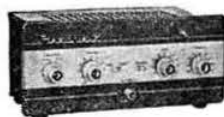
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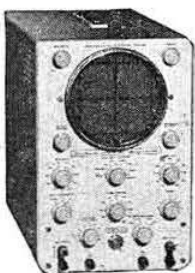
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Actual size

Abridged data

V_h	= 6.3V
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V_{al+a3}	= 350V min.
S_x	= $\frac{95}{V_{a3}}$ mm/V
S_y	= $\frac{110}{V_{a3}}$ mm/V



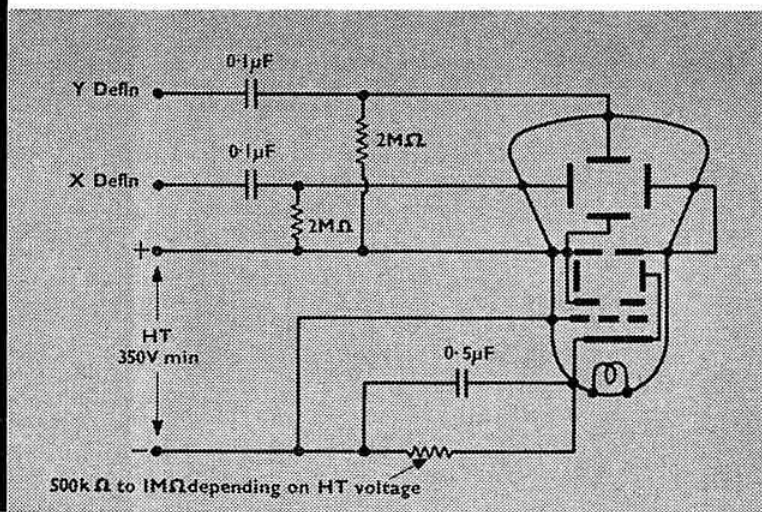
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If you are interested in the simplest and most economical method of waveform monitoring write to the address below for further details.



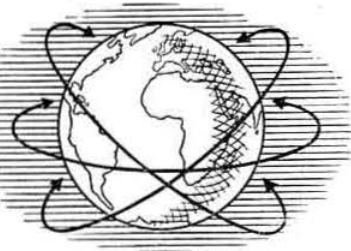
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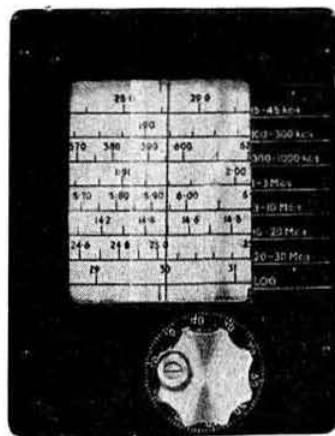
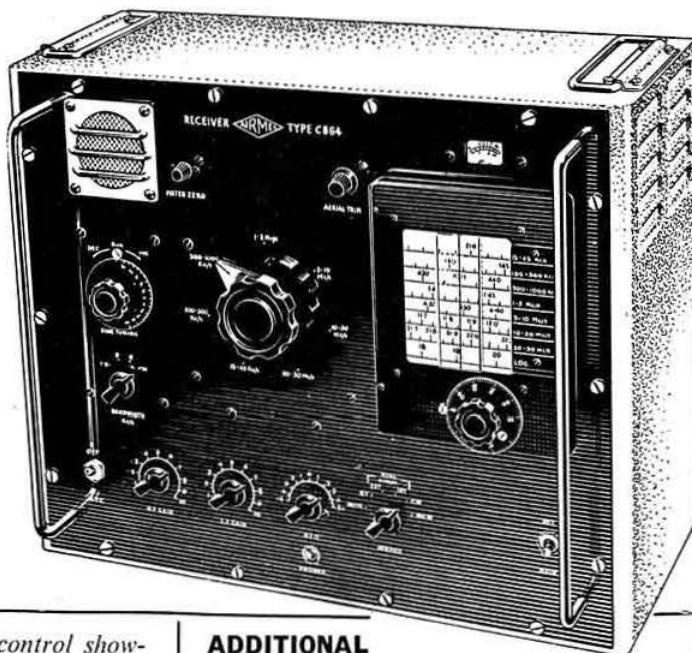
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Superior Second Channel Rejection



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- Film Scale giving actual Scale length of 4 ft. on each frequency range.

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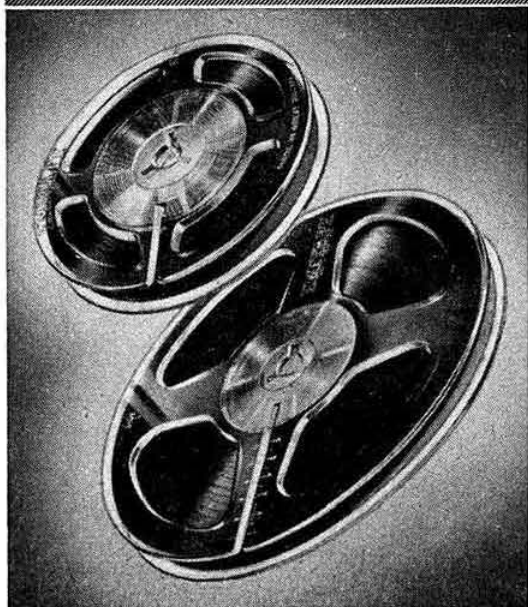


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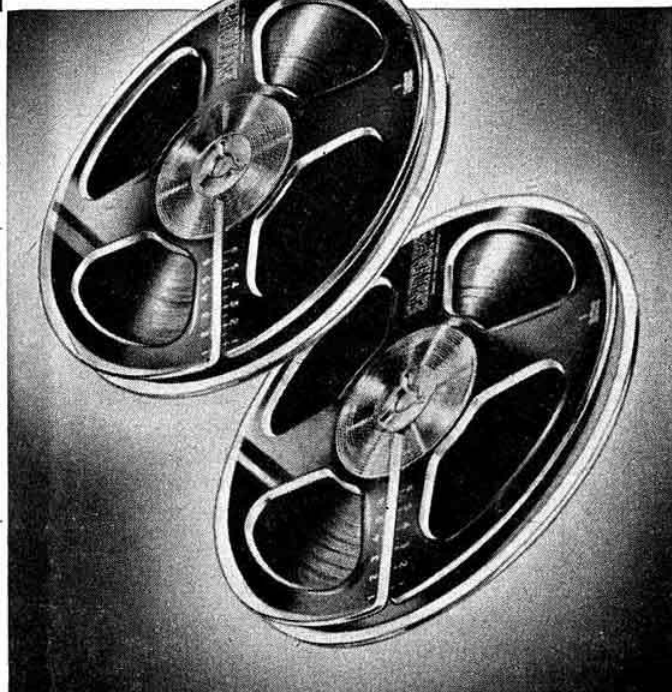
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R.S.G.B. BULLETIN

Volume 34 No. 12
June 1959

EDITOR:

John Clarricoats, O.B.E., G6CL

ASSISTANT EDITOR:

John A. Rouse, G2AHL

Geneva

THE announcement, made elsewhere in this issue, that Mr. L. E. Newnham, B.Sc. (G6NZ), Immediate Past President, has been invited to join the United Kingdom delegation to the forthcoming I.T.U. Ordinary Administrative Radio Conference in Geneva as an adviser on Amateur Radio matters, will be read with great satisfaction by all members who will regard the invitation as a further example of the good relations which exist between the Society and the General Post Office and other Government departments.

Mr. Newnham's extensive knowledge of the Radio Regulations and his vast experience as a practising amateur will prove of the greatest value not only to his colleagues on the U.K. delegation but also to the I.A.R.U. team of observers.

Never before, in the long history of International Telecommunication Union Conferences, has the Society been invited to appoint a representative to serve on the United Kingdom delegation. At the Madrid, Cairo and Atlantic City Conference R.S.G.B. representatives were in attendance but in each case as observers nominated by the International Amateur Radio Union.

Those who have been charged with the responsibility of seeing that the needs of the Amateur Service are not lost sight of at the Geneva Conference need the support and encouragement of all amateurs. Fortunately the amateur movement in the United Kingdom has never seriously been affected by politics, but in some parts of the world there has been, and still is, evidence of dis-sentiment. Amateur Radio is too valuable a service to become a pawn in a game of politics.

The first two sections of the long-awaited Book of Proposals have now been published and although, as yet, only a few administrations have made known their proposals in respect to the Frequency Allocation Table some of them look dangerous. For example several European Common Market countries have joined forces in a joint proposal, the effect of which would be to deprive the amateurs of Region II (America) of the band 7-15-7.3 Mc/s. They also propose that the present 28-29.7 Mc/s band should be cut to 28-29 Mc/s.

Australia has proposed drastic reductions in the width of the 3.5, 7 and 14 Mc/s bands whilst India has put forward a proposal, the effect of which, if accepted, would be to reduce the width of the 3.5-3.8 Mc/s amateur band to 15 kc/s! The Australian proposals are all the more disturbing because they were kept secret from Parliament, the amateurs of Australia and the press.

The frequency proposals of the United Kingdom, Canada, New Zealand, South Africa, the United States and many other countries had not been published up to the time this issue closed for press but we have every reason to believe that the U.K. and U.S. proposals will be largely in the nature of *status quo*.

That the forthcoming Conference will develop into a bitter struggle for frequencies goes without saying. We do, however, advise members to ignore rumours.—J. C.

Emergency Issue

In common with other magazines and periodicals, the Bulletin is suffering from the dispute in the printing industry. As a result, regular features have had to be considerably reduced in length or omitted entirely while many topical and technical items have been unavoidably held over.

Mr. J. A. Rouse

WITH effect from July 1, 1959, Mr. J. A. Rouse will relinquish the position of Deputy General Secretary and will assume the position of Deputy Editor.

Contests Diary

1959

- | | |
|----------------|--|
| June 20-21 | - First 70 Mc/s Contest* |
| June 28 | - D/F Qualifying Event (High Wycombe)* |
| July 1-31 | - Papua and New Guinea 3.5 Mc/s Contest |
| July 5 | - Second 144 Mc/s Field Day* |
| July 12 | - D/F Qualifying Event (Slade Radio)† |
| September 5-6 | - European V.H.F. Contest†
National 144 Mc/s Open Contest†
National 420 Mc/s Open Contest†
National 1250 Mc/s Open Contest† |
| September 6 | - D/F National Final |
| September 20 | - Low Power Field Day |
| September 27 | - R.A.E.N. |
| October 3-4 | - VK/ZL DX Contest (Phone Section) |
| October 10-11 | - VK/ZL DX Contest (C.w. Section) |
| November 7-8 | - Second 1.8 Mc/s Contest |
| November 21-22 | - R.S.G.B. Telephony Contest |

* For details see page 549, R.S.G.B. Bulletin, May, 1959.

† Under Region I, V.H.F. Committee rules.

‡ Details on page 586.

§ For details, see page 451, R.S.G.B. Bulletin, March, 1959.

|| For details, see page 493, R.S.G.B. Bulletin, April, 1959.

Versatile V.F.O./Transmitter

By P. J. H. MATTHEWS (G3BPM)* and
H. T. ROGERS (G3NHR)†

AFTER passing the Radio Amateurs' Examination and prior to taking the Morse Test, G3NHR decided to build a transmitter to operate on 1.8 Mc/s that at a later date would be useful as a v.f.o. for driving a more powerful p.a. operating on 3.5, 7, 14, 21 and 28 Mc/s. At about the same time G3BPM was testing series gate modulation† and it was upon the transmitter to be described that the original tests of this method of modulation were made. The result is a versatile v.f.o./transmitter for phone or c.w. operation, the modulator being capable of modulating a higher power transmitter at a later date with little change.

Circuit Description

As the transmitter was to be used as a driver for the higher frequency bands, the choice of circuit for the v.f.o., V1 (Fig. 1), had to be given careful consideration. After studying the various circuits in the literature it was decided to adopt the Tesla oscillator [1] in view of its superior stability both in respect of voltage and temperature variations, and because of its constant output over the frequency range covered. The valve used in this particular arrangement is a high slope pentode which has proved stable and free from microphony. The h.t. supply to the v.f.o. is fed from a neon stabilizer. Keying is in the oscillator cathode circuit thereby providing full break-in facilities.

The v.f.o. is coupled to the buffer stage (V2) through C8. This stage effectively isolates the v.f.o. from the driver-amplifier (V3). The anode circuits of both V2 and V3 are tuned by dust cored coils and are preset to the mid-point of the band covered (1.75-2 Mc/s). The anode circuits of both V2 and V3 are individually decoupled to assist in keeping the whole unit stable.

By employing both buffer and driver-amplifier stages not only is the v.f.o. isolated from the output stage but adequate grid drive is available for the small beam tetrode (V4) operating as the power amplifier. The grid drive from V3 with only 240 volts on its anode is in fact considerably in excess of the requirement for the p.a. and 5 mA of grid current is easily obtained. To reduce this to the required level, resistors are fitted across the anode tuned circuits of both V2 and V3. With a power supply of 240 volts, 10 K ohms has proved a satisfactory value of damping resistor to give 2.4 mA drive to the power amplifier across the whole band with very little variation. Should V3 be operated with 300 volts on the anode it might be necessary to reduce these resistors to avoid over-driving the p.a. It is most important that the drive should be limited to 2.5 mA, both in the interests of the p.a. valve and to avoid excessive harmonic output.

A mixture of fixed and self bias is used on the p.a. stage to achieve optimum operating condition and to ensure protection to the p.a. stage under key-up conditions. Anti-parasitic resistors have been included although the stage is quite stable without them in the original transmitter; however they are a sensible precaution.

The p.a. valve feeds a parallel-fed pi network [2] which has a combination of both fixed and variable capacitors to ensure that only the Top Band can be tuned. The network is arranged for 80 ohms output to enable either a modified Z Match aerial tuner or the higher powered transmitter to be fed with standard coaxial cable. The p.a. screen is directly coupled to V5 acting as a "series gate" modulator, R27 and C30 being the screen decoupling components. One advantage

of this particular arrangement is that the same modulator will easily modulate a 150 watt p.a. stage later by merely changing the existing valve V5 to a 12BH7 and increasing the negative bias from 67½ volts to 105 volts. It would then be necessary to feed the screen of V4 through a resistor of approximately 27 K ohms. V6 is the speech amplifier and is designed for a crystal microphone. On c.w. the maximum voltage on the p.a. screen is controlled by R24 and R25 acting as a potential divider across the high voltage supply. V5B then functions simply as a cathode follower and helps to ensure that the p.a. stage screen supply is stabilized.

Just as v.h.f. parasitic oscillation is avoided by the use of the anti-parasitic resistors in the p.a. stage, low frequency parasitic oscillation is prevented by using only two r.f. chokes in the equipment. These two chokes are in stages well separated electrically from each other.

The number of stages may be considered to be excessive for a Top Band transmitter but are most necessary to enable the output to be used for driving a high power p.a. At the same time the arrangement helps to ensure that the signal on Top Band is beyond reproach.

Practical Construction

The transmitter is completely screened and also has screening between the various stages. From Fig. 2 it will be seen that the v.f.o. and the p.a. stages are in individually screened boxes located at either end of the chassis with the buffer and driver in between. The latter stages have inter-stage screens below the chassis and screening cans on the valves themselves. V1 and V4 are located inside their respective boxes, the box for V4 being well ventilated.

V1 is enclosed with the v.f.o. components and no ventilation is provided. This may seem contrary to usual practice but in fact ensures a high degree of long term stability of calibration because the whole stage acts as an oven, raising the v.f.o. operating temperature rapidly above the ambient temperature. After a surprisingly short time the v.f.o. is exactly on calibration and remains so for long periods. Even the initial drift is very small and compares well with other types of v.f.o.

The modulator is built on a small sub-chassis mounted above the buffer and driver amplifier stages and as it is fitted with a small B7G plug and socket, it can be removed

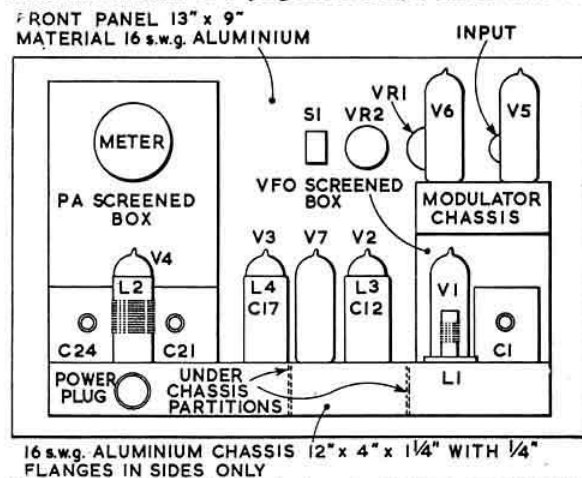


Fig. 2. Rear view of the chassis layout with the screening covers removed.

* 18 Kings Avenue, Sunbury-on-Thames, Middlesex.

† 8 Pownall Road, Hounslow, Middlesex.

‡ "Series Gate Modulation," R.S.G.B. Bulletin, May 1959.

easily for access to V2 and V3. The potentiometers VR1 and VR2 and the switch S1 are fitted to the panel with flying leads.

The anode tuned circuits of V2 and V3 are mounted in small aluminium screening cans above the chassis; miniature 1600 kc/s i.f. transformers can be used if the capacity is altered to that shown.

The cabinet was supplied by Philipotts Metalworks and the details of the chassis and panel are shown in Figs. 2 and 3.

No power supply details are given as the original transmitter was operated on d.c. mains with the negative potentials derived from batteries. Any power supply capable of 250-300 volts at 75 mA and 65-75 volts at 5 mA will prove adequate.

The completed unit measures 13 in. \times 9 in. \times 4 in. and it is quite easy to fit the components without overcrowding.

Setting Up

First check all soldered joints and connections for dry joints. It is a good idea to paint each connection with a spot of thin shellac as examined; any missed are then quickly spotted. Next check with a test meter to ensure that no short circuits exist between the high voltage lines and chassis; also check the continuity of the heater circuit. When checking is complete the power supplies can be connected. The heater and other voltages should be measured to see that they are correct. Switch S1 to "PHONE."

The v.f.o. can now be calibrated. With a receiver, tune across the desired band (1.75-2 Mc/s) until the signal is heard. It is then a matter of ensuring that the band just covers the dial; adjustment may be effected by C3. Exact calibration is best carried out with a crystal calibrator, BC221 frequency meter or a similar wavemeter which has been checked against MSF or the B.B.C. on 200 kc/s.

To check the grid drive to the p.a. a 0.5 mA meter is placed in series with the negative 22.5 volts supply to the p.a. stage; L2 and L3 can then be adjusted for maximum grid current with the v.f.o. set to 1.9 Mc/s. The drive should not vary across the band. If the grid current exceeds 2.5 mA the value of the damping resistors should be reduced.

With switch S1 set to "c.w." the p.a. anode circuit tuning can be tested with a non-inductive 80 ohms load. If such a load is not available, four 6.3 volt 0.3 amp. lamps in series can be used. The anode current should be 30 mA with a 300 volt h.t. supply.

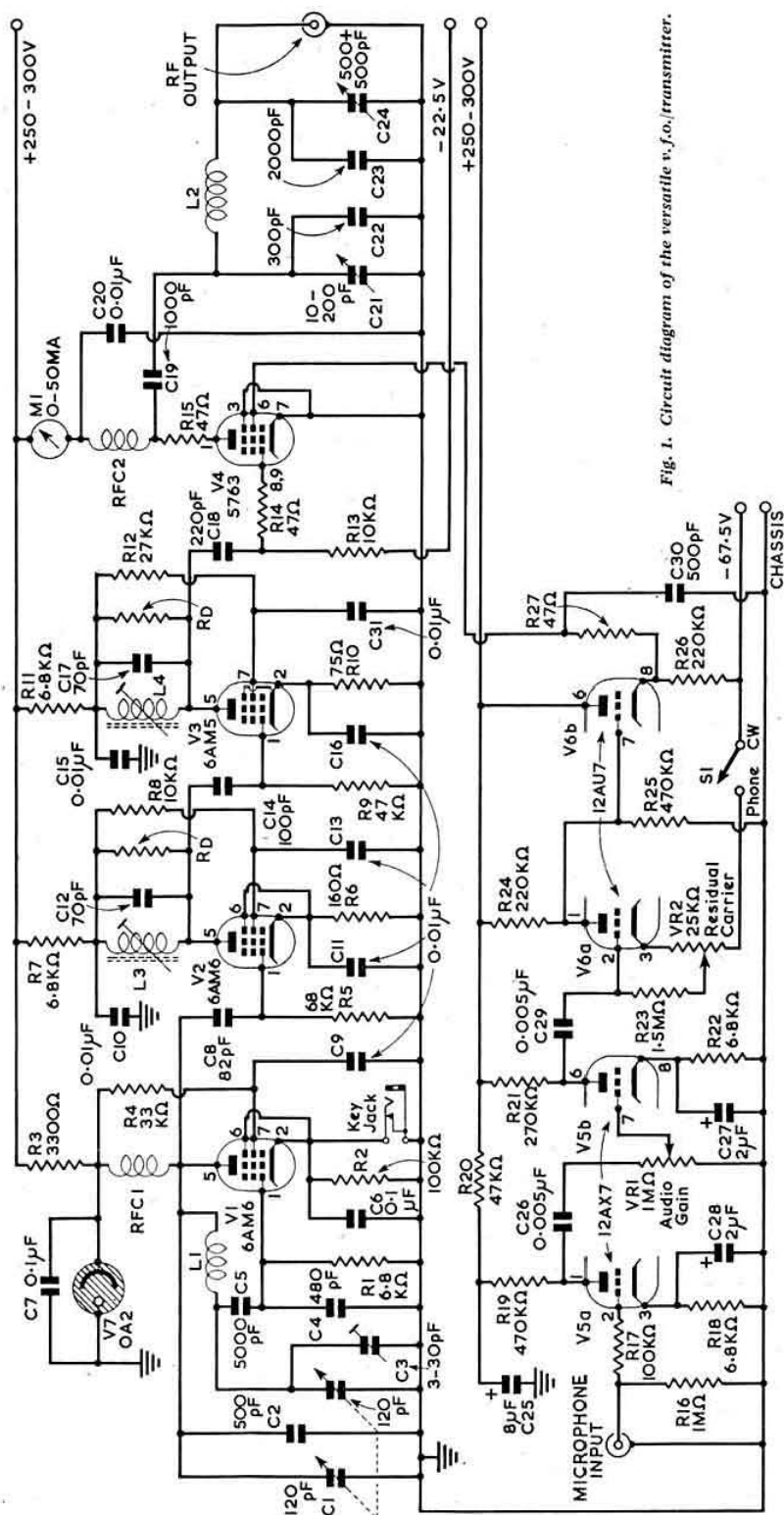


Fig. 1. Circuit diagram of the versatile v.f.o. transmitter.

To adjust the "series gate" modulator to the correct condition, turn VR1 to minimum and VR2 to maximum, switch S1 to "PHONE," and, by means of VR2, set the p.a. anode current to between 5 and 8 mA. Next, while speaking into the microphone, slowly increase VR1 until the speech peaks cause the p.a. anode current meter to kick up to the reading achieved when the p.a. is correctly tuned and loaded, i.e. 30 mA. If the quality is satisfactory in a phone monitor the transmitter is ready for use on the air.

In the original transmitter built to this design, no spurious oscillation occurred in the p.a. stage. To check for this

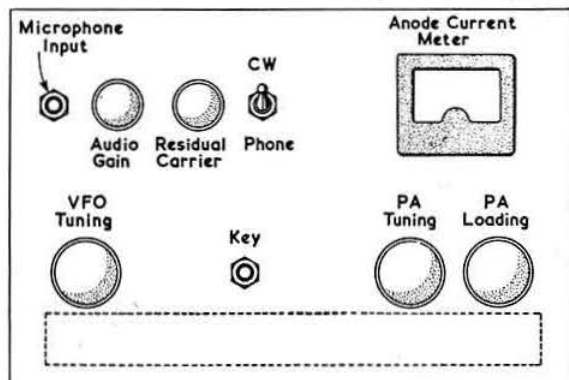


Fig. 3. Panel layout.

condition, leave the key up, set S1 to "c.w." and reduce the bias on the p.a. stage until a current of approximately 25 mA is indicated in the anode meter. Swing the tuning and loading controls over their whole range; if all is well the meter reading will remain constant, but if any oscillation is taking place wide variation in the readings will occur for small variations in either the loading or tuning controls. This operation must be carried out very quickly to avoid damage to the p.a. valve as the anode dissipation will be high. Should oscillation be present it must be completely eradicated before bringing the transmitter into use. Possible causes of instability are V4, the decoupling and anti-parasitic components. The latter should be tested for correct value.

Results

G3NHR has used this transmitter for some time and results have been entirely satisfactory. Work is now in hand to build a more powerful transmitter for the h.f. bands which will be driven by this design. Anyone contacting

G3NHR will be able to hear for themselves how effective is the transmitter.

References

- [1] "The Tesla Oscillator," R.S.G.B. BULLETIN, March 1956.
- [2] "The Design of Pi-Network Tank Circuits," R.S.G.B. BULLETIN, April 1952.

COMPONENTS LIST

- C1, 120pF two gang.
- C2, 500pF 5% silver mica.
- C3, 3-30pF trimmer.
- C4, 480pF 10% silver mica.
- C5, 5000pF 10% silver mica.
- C6, 7, 0.1μF 350 volt, paper.
- C8, 82pF 10% silver mica.
- C9, 11, 16, 31, 0.01μF 350 volt, paper.
- C10, 13, 15, 20, 0.01μF 500 volt, paper.
- C12, 17, 70pF 5% silver mica.
- C14, 100pF 10% silver mica.
- C18, 220pF 10% silver mica.
- C19, 1000pF 1kV mica.
- C21, 10-200pF air spaced.
- C22, 300pF 10% silver mica.
- C23, 2000pF 10% silver mica.
- C24, 500pF two gang.
- C25, 8μF 350 volt electrolytic.
- C26, 29, 0.005μF 500 volt paper.
- C27, 28, 2μF 12 volt electrolytic.
- C30, 500pF 20% 500 volt silver mica.
- L1, 38 s.w.g. closewound for 0.4 in. on 0.42 in. Aladdin former.
- L2, 26 turns 24 s.w.g. 1½ in. dia. closewound (20μH).
- L3, 4, winding from miniature 1600 kc/s i.f.t. (100μH).
- M, 0.50mA m.c.
- R1, 6.8 K ohms 5% 1 watt (high stability).
- R2, 100 K ohms 20% ½ watt.
- R3, 3.3 K ohms 10 watts.
- R4, 33 K ohms 20% ½ watt.
- R5, 68 K ohms 20% ½ watt.
- R6, 160 ohms 20% ½ watt.
- R7, 11, 6.8 K ohms 20% 1 watt.
- R8, 13, 10 K ohms 20% ½ watt.
- R9, 20, 47 K ohms 20% ½ watt.
- R10, 75 ohms 20% ½ watt.
- R12, 27 K ohms 20% ½ watt.
- R14, 15, 27, 47 ohms 20% ½ watt.
- R16, 1 Megohm 1 watt (high stability).
- R17, 100 K ohms 1 watt (high stability).
- R18, 22, 6.8 K ohms 20% ½ watt.
- R19, 25, 470 K ohms 20% ½ watt.
- R23, 1.5 Megohms 10% ½ watt.
- R24, 26, 220 K ohms 10% ½ watt.
- RD, see text.
- RFC1, 2, 2.5mH.
- S1, s.p.s.t. toggle switch.
- V1, 2, 6AM6 (Brimar).
- V3, 6AM5 (Brimar).
- V4, 5763 (Brimar).
- V5, 12AX7 (Brimar).
- V6, 12AU7 (Brimar).
- V7, OA2 (Brimar).

Twinkletoes Wins Mullard Award for 1958

PETER ODELL (G3MUM), of Redcar, Yorkshire, is to be the first recipient of the Mullard Award. Familiarly known as Twinkletoes, Peter is completely paralysed except for the toes of one foot.

For many years Peter was a keen short wave listener and then at the suggestion of a Past President of the R.S.G.B. he joined the Society and became a B.R.S. About two years ago he was urged to study for a transmitting licence and after some persuasion he did so. In less than a year he had passed the Radio Amateurs' Examination and the Post Office Morse test. He has now been on the air as G3MUM for about 12 months.

Peter controls his station with the toes of his good foot, hence the affectionate nickname, "Twinkletoes." He never mentions his handicap over the air and apart from a reference on his QSL card to membership of the Invalid and

Bedfast Club there is nothing to indicate that he is completely crippled.

Before receiving his licence Peter had great difficulty in speaking freely but now, as the result of increased confidence, he is able to speak much more easily. Incidentally, his operating methods are correct and quick.

In considering the nominations put forward on behalf of Mr. Odell, the Mullard Award Committee came to the unanimous decision that he had, by his example of fortitude and courage, rendered outstanding personal service to the community.

The decision to make the award to Peter Odell will undoubtedly give special pleasure to those who have received QSL cards and letters carefully written by his parents, who have so devotedly helped him.

The Mullard Award will be presented to Mr. Odell at a ceremony next month.

Lightweight Multi-band Aerial

By W. H. HAZELDON (G3KBE)*

THERE is little doubt that from many points of view, a centre-fed aerial is much to be preferred to the end-fed. Nevertheless, many stations do use the latter, with the result that one end of the radiator is brought right to the operating position, although both high voltage ends should be "in the clear." It is suggested that the cheap, efficient, and lightweight centre-fed aerial to be described would transfer a considerable amount of r.f. from the immediate vicinity of the transmitter to the aerial proper with far less vertical radiation, so undesirable from the TVI point of view when living in a built-up area. It is simple to construct and has no soldered joints but will be found to load up well on all bands from 160 to 10m. Satisfactory results have been obtained on both the l.f. and h.f. bands.

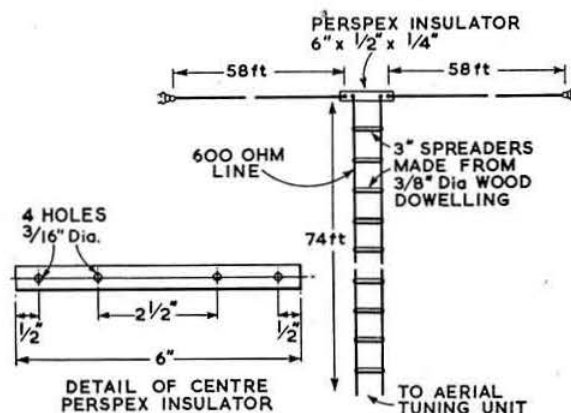


Fig. 1. Details of the lightweight multi-band aerial. The four holes in the perspex insulator should be $\frac{3}{16}$ in. diameter.

The wire used for both the radiator and feed line is the flat "side by side" stranded p.v.c. twin flex which is readily obtainable at low cost. It is nearly equivalent to 18 s.w.g. wire. The amount required is 132 ft. which is pulled apart, making two lengths each 132 ft. long. Of this length, 116 ft. is used for the radiator, leaving 74 ft. in each piece to form the 600 ohm line with which the two 58 ft. sections are fed. A piece of Perspex measuring 6 in. \times $\frac{1}{2}$ in. \times $\frac{1}{4}$ in. forms the centre spacer.

The feeder spreaders are made from 10 ft. of $\frac{3}{8}$ in. wood dowelling. A small quantity of panel pins is also required for fixing the feeder lines to the spacers. The dowelling is cut into 3 in. lengths and $\frac{1}{2}$ in. from each end a $\frac{3}{16}$ in. hole is drilled. It is not necessary to treat them in any way.

The Perspex is drilled with four holes of $\frac{3}{16}$ in. diameter, the two inner holes being drilled $2\frac{1}{2}$ in. apart in the centre and the two outer holes about $\frac{1}{2}$ in. from each end. It is an advantage to drill the outer holes at an angle so that a sharp edge is not presented to the 58 ft. lengths where they leave and enter the spacer. Each end of the 132 ft. lengths is then brought through the inner holes and taken out through the outer holes so that about an inch or so of radiator can be tightly bonded to the spacer by means of waxed thread, preventing any slip through the spacer. The two 58 ft. lengths are terminated in good quality long leakage path insulators.

* 65 Bretby Lane, near Burton-on-Trent, Staffs.

The drilled wood spacers used in the line are threaded through the two centre wires (which should each be now 74 ft. long) and spaced along them at intervals of 2 ft. A panel pin is made a push fit into the hole with the wire and will be found to provide sufficient grip in the strongest gale. The ends of the feeders can be terminated with Clip plugs but care must be taken that the rather fine wires which make up the conductor are not broken off in the process.

The dimensions given should fit well into the average house/aerial space where the point of entry of the feeders is almost directly below the fixing point for one end of the radiator. At this juncture, it might be stated, that with centre feeding, the length of the radiator can be adjusted from the length stated with compensatory alteration made in the length of the feed line, so as to keep the total length a half-wave on the lowest band on which it is desired to operate.

With the materials suggested the amount of drag and consequent lowering of aerial height at the centre is greatly minimized. However, the 600 ohm line should be brought down at right angles to the top section and be supported just above head height with a light pole (say 10 ft. of 1 in. \times 1 in.) to take the weight of the line from the support point to the lead-in at the transmitter. It will be found that a simple aerial tuning unit comprising a coil and capacitor in parallel will match the system satisfactorily via a link to the usual 80 ohm pi-section output of a p.a.

Carmarthen Bay "Bucket and Spade" Party

PEMBROKESHIRE, Cardiganshire and Carmarthen-shire members are due to meet at the Evelyn Café, Saundersfoot on Saturday, July 4 but the success of the meeting will depend upon the support given by members from other counties. Wives and families are invited. Mobiles will be talked in from 11 a.m. to the car park (which adjoins the sands) by GW2OP/M and/or GW3LXI/M. Those attending are asked to notify GW2OP immediately so that catering can be arranged.

Amateur Radio at Bristol Methodist Conference

AN organization known as the World Association of Methodist Radio Amateurs and Clubs is to operate an Amateur Radio station from Langton Street Methodist Church, Bristol, during the period July 6 to 16, 1959. The station will use the call GB3BMC and will be active daily from 10 a.m. to 10 p.m. The Secretary is the Rev. A. W. Shepherd (G3NGF), 75 Park Road, Mansfield Woodhouse, Notts.

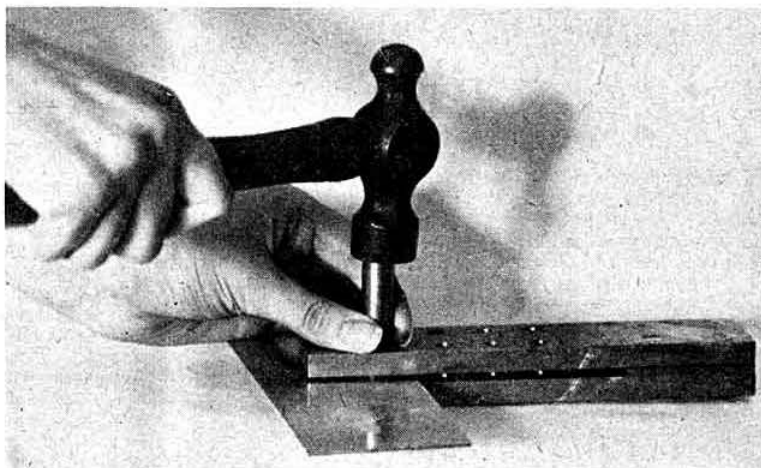
Southampton Show

THE Southampton R.S.G.B. Group will be staging an Exhibition of Amateur Radio activities as part of the Southampton Show which takes place on July 10 and 11. This year, apart from the transmitters in action on various bands under the call-signs G2FGD and G3JLS, there will be a display of R.A.E.N. equipment with several mobile stations in action. A bench showing the work of junior members will also be a feature. Items displayed on the R.S.G.B. Group stand will be picked out during the show by amateur television equipment constructed by B.R.S. 16075. Live items from the show will also be shown over this system. The Gardner Cup for the best piece of home-constructed equipment will be competed for. Mr. L. E. Newnham, B.Sc., G6NZ (Immediate Past President) and other Society officials are expected to be among the judges.

Further details are available from the Southampton T.R. Mr. G. Allcock (G3ION), 29 Granby Grove, Southampton,

Universal Hole Punch

By C. H. L. EDWARDS (G8TL)*



THE usual method employed by amateurs to make holes in metal for components such as phone jacks and switches is to use the largest size bit the hand or electric drill will take (in most cases $\frac{1}{8}$ in.) and then laboriously to file out the hole to the required size. Quite a lot of time and energy can be expended in this way when there are a number of $\frac{1}{8}$ in. holes to be made! Using the device to be described holes up to $\frac{1}{2}$ in. in diameter can be punched in aluminium with one sharp blow of a hammer, leaving a clean cut edge.

The tool is simple and cheap to make, the prototype com-

repeated blows would not burr the metal and thus prevent the tool passing through the guide holes.

Silver steel is sufficiently hard to cut many holes without blunting but it can be further hardened by heating it to a bright red colour and quenching it in oil. It must then be tempered by first polishing and then placing it in a flame until the steel becomes a straw colour. When this occurs, the tool should be taken from the flame and again quenched.

The pairs of small holes in the strips shown in Fig. 1 and the photograph are for taper pins which act as distance pieces for use when a series of holes are to be punched in line. In this manner, the greater part of a square hole can be cut out, leaving only the edges to be filed.

Improvements to the basic design described could obviously be made but have not been dealt with in this article as it was considered best to keep the construction simple.

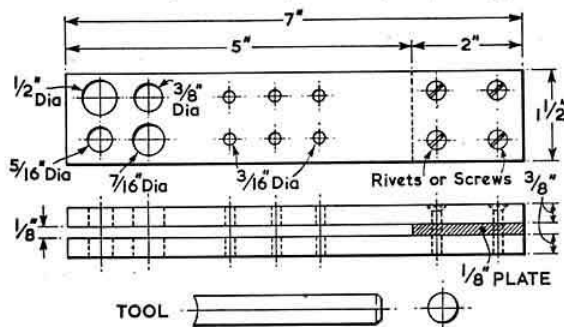


Fig. 1. Construction of the hole punch and cutting tool.

prising two pieces of $\frac{3}{8}$ in. thick mild steel measuring 7 in. long by $1\frac{1}{2}$ in. wide. Suitable material can often be obtained as "off-cuts" from garages, workshops or blacksmiths. The two pieces are spaced at one end by a piece of $\frac{1}{8}$ in. plate measuring 2 in. by $1\frac{1}{2}$ in. riveted in position as shown in Fig. 1. The 5 in. slot thus formed allows holes to be made anywhere in a panel up to 10 in. wide.

Guide holes of $\frac{1}{16}$, $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{1}{2}$ in. diameter were drilled in matching pairs in both top and bottom strips by the local blacksmith. The holes can of course be of any size within reason but those selected appear the most likely to be needed in the normal home construction of radio and electronic apparatus. Larger holes for B7G and B9A valveholders could also be made if desired.

The cutting tools were made from standard silver steel, obtainable in foot lengths from most tool shops. In each case, the piece required, about 2 in. long, was cut off and one face hollow ground by pressing it squarely against the face edge of a grinding wheel. The other end was bevelled so that

D/F Qualifying Events

THE three leading entrants in the D/F Qualifying Event organized by Oxford and District Amateur Radio Society and held on May 10, were Messrs. E. L. Mollart (B.R.S. 10977), T. C. Reynolds (B.T.H. Rugby) and J. K. Finch (B.R.S. 15588).

Messrs. J. R. Knight (G3JRK), G. Nicholson (G3HKC) and G. Grant (B.R.S. 6395), were the leaders in the Event on May 24 organized by South Manchester Radio Club.

Papua and New Guinea 3.5 Mc/s Contest

FROM July 1 to 31, 1959, the Papua and New Guinea Division of the Wireless Institute of Australia, Box 204, Port Moresby, is organizing a 3.5 Mc/s phone and c.w. contest. Only one contact per station per day will be permitted. No awards will be made in connection with the event but all the VK9 stations concerned will QSL.

Tesla V.H.F. Memorial Contest

THE Yugoslav national society S.R.J. is arranging a v.h.f. contest for the period 18.00 G.M.T. on July 4 to 18.00 G.M.T. on July 5. Contacts in the 72, 144, 420 and 1,250 Mc/s bands will count for points at the rate of one point per kilometre.

Minimitter Transistor Power Supply Transformers

THE Minimitter Co. Ltd. states that an improved transformer which delivers 300 volts at 130 mA, is now available for use in the circuit described in *Mobile Column* in the May issue. The frequency of oscillation is 2,000 c/s. The transformer costs £3. 15s.

* 28 Morgan Crescent, Theydon Bois, Essex.

The Month on the Air

By J. DOUGLAS KAY (G3AAE)*

OUR next issue—being the first of a new volume—presents a suitable opportunity to make a new approach to this column if readers so desire. It must always be the primary aim of a scribe to provide the maximum amount of useful information within the space available, and the present scheme of reporting calls worked and heard on the bands does result in a great amount of duplication and consequent waste of space. For example a dozen different contributors may report working or hearing SV0WB on 28 Mc/s phone around 14.00-15.00 G.M.T., when a single entry would suffice to indicate that he is active on that band at that time. The present system does not list the stations in any sort of order, and to extract the desired information on certain stations every individual report must be scrutinized. With the great, and very welcome increase in support—including promises of regular contributions from most of the top DX men in the country—this is a problem which is likely to increase, unless another method of presentation is adopted.

There is a simple solution and one which your commentator would like to try experimentally. Taking a hypothetical case, it would work something like this:

14 Mc/s C.W.

Thanks to G2PL, G3AAM, G3YF, G4CP, G5DJ, G6ZO, G8KS, GW3AHN, B.R.S.20104, etc., etc.
AC4AX (14.10, '080), AP5HQ ZM6AS.

This system, which would list all the call-signs alphabetically, and giving the complete span of times between which stations had been observed, would split each band into phone and c.w. and would give block credits to all contributors to each section. It would avoid all duplication, and would not only allow many more stations to be listed but would also leave room in the column for more DX news and gossip. Shall we try it?

This month over 50 individual contributions have been received, which really is a most gratifying response to recent appeals. If, however, everything you have reported is not used please understand that it is solely due to lack of space, or that the information has already been received from another source.

DX Gossip

From VK3YS comes news that VK5TF has been operating as VK0TF from Davis Base, Antarctica, mainly on 14,080 kc/s c.w. since February and will be active until March 1960 when he returns to Australia. The address for QSLs is in QTH Corner.

From K2OEA we learn that ZK2AB suffered extensive damage in recent hurricanes and is now QRT, but that ZK2AD is still going strong. K2OEA has a sked with ZK2AD every Thursday at 03.00 G.M.T. on 14,050 kc/s. He says that CR5AC has now returned to Portugal, but that CR5AD has been licensed and will soon be active from Portuguese Guinea.

G3LWX writes to say that he is sorry for the delay in answering cards sent to him for VP8CY contacts, but promises to distribute them through the Bureau in the very near future.

Bill Wheeler, G3BFC, ex-MP4BCL, ZD3BFC, VQ6BFC, MT2BFC, says that he has so far received only six cards for the 250 contacts that he had from Bahrain. If anyone needs a card from him for MP4 or any of his earlier call-signs Bill can be reached at International Aeradio Ltd., College of Aeronautics, Cranfield, Bleckley, Bucks.

Ron Glaisher, G6LX has handed over the running of the 3A2 bureau to 3A2AH, whose address appears in QTH

Corner. Ron has recently had to destroy nearly 1,000 cards addressed to pirates using such call-signs as 3A1W, 3A2YB, 3A4A, 3A2DX, 3A2USA, 3A2AA, etc. Licensed as 3A2AY, he generally manages to spend a couple of weeks operating from Monaco each year, and has worked 149 countries on phone, 98 on s.s.b. and 168 on c.w.

The position in Sierra Leone is outlined by G2MI, who states that ZD1GM is presently on leave, ZD1FG is temporarily QRT due to a burned out transformer, ZD1PW is QRT, ZD1JP and ZD1PB are new licensees who will soon be on, while the most active station is ZD1EO, who has recently taken over the duties of QSL Manager.

Les Hamilton GM3ITN together with GM3KBZ and GM3LYS will be operating GB2AC from the island of Ailsa Craig between July 19 and 25. Activity will be on 7, 14 and 21 Mc/s.

In a most interesting letter to W6YY, Ruy Trinidad CR10AA writes to say that he has not been able to get on the air recently due to illness. He is also still having trouble with power supplies, but as soon as he feels fit promises to get a low power c.w. transmitter on the air. W6YY says that he heard a station signing 4G2H on 14,088 kc/s recently, while G3YF heard another odd one in 8J1AA on 14,010 kc/s.

An informative letter from Ian Cable MP4BBW gives news from his part of the world. He hopes to operate MP4TAD from Trucial Oman on s.s.b. between June 18 and 20, while MP4DAA/TAC will cover a.m. and c.w. From July 16 to 18 Ian will operate from Qatar as MP4QAN on s.s.b. It is hoped that MP4TAC will shortly be able to get on from the Sultanate of Oman which he visits from time to time. Ian says that the W6UOU KWM-1 will go to ISGN in Italian Somaliland in mid-June, and that it will continue to be used by VS9AH until then. AP2CR is again active on s.s.b. and can usually be found between 14.00 and 18.00 G.M.T. on the high frequency end of 20m.

G6ZO says that VS5JA is shortly returning to New Zealand where his home call-sign will be ZL4JA once more. G6ZO also reports that FW8AA Wallis Island, presently active on the h.f. end of 20m, will return to France in January or February 1960.

G3MVB learns from VS1GZ that he will shortly be signing ZC5KB and will operate mainly on 21 and 28 Mc/s phone for about six months.

From G8KS comes news that ZL3VB on Chatham Island can sometimes be heard around 08.30 G.M.T. on 14,038 kc/s and that ZL2GX usually keeps things from getting out of hand.

G6GH takes the writer to task for stating last month that IP1ZGY had been active from the Pelagic Islands in the Adriatic, while in fact the Pelagic Islands are situated between Malta and Tunisia. The island in the Adriatic is called Pelagosa, which while having almost the same name, belongs to Yugoslavia and not to Italy. Sorry! G6GH thinks that there is a good case for the Pelagic Islands being given country status for DXCC, especially as Serrana Bank recently acquired that status, despite the fact that the expedition had difficulty in finding it! There is no doubt that there is some connection between the distance from North America and the ease or difficulty with which country status is obtained.

(Flash: A.R.R.L. DXCC department have just announced that the Pelagic Islands will not be given country status on grounds that they are only 100 miles from the mainland.) GW3AHN says that YJ1OM now signs VR2DO, and that FB8CD of the Comoro Islands can very often be found on 21,120 kc/s between 17.00 and 18.00 G.M.T.

* 18 Fairfield Way, Barnet, Herts.

Congratulations to Ron Perks **G4CP** on reaching the DXCC Honour Roll for the first time, and let it be noted that he uses wire aerials and war surplus equipment. So it can be done without fancy beams and tailor-made equipment. The May issue of *QST* shows three G stations in the Honour Roll, the other two being **G2PL** who has been up there for years, and **G3AAM** who burst upon the scene about a year ago, after quietly amassing the DX since obtaining his licence in 1946. It is indeed gratifying to see that the only three European stations up there are all Gs. While we all wonder how they do it, we offer hearty congratulations to the trio. Keep up the good work, and thank you for your contributions to *M.O.T.A.*

Mention was made earlier of **CR10AA**, and from Bill Wilkinson B.R.S.20317 comes news that **CR9AI** has gone to Portuguese Timor, while **G3AAM** reports having heard **CR10AA** being called on 21 phone and 14 c.w. There may be some connecting link there.

From B.R.S.22249 we learn that **VS9AM** is now back in the U.K. and hopes soon to have a GD call-sign. **ZC4GS** is now QRT as will be **ZC4AM**, the R.A.F. club station at Nicosia, at the end of July.

G3FMO says that **W8NPC** was active on 29.06 Mc/s early in April from the Atomfair section of the Fifth Nuclear Congress at Cleveland, Ohio. During the four days of operation **W8NPC** made a number of contacts, and was powered by a thermoelectric atomic generator, using 60 watts of heat to generate 3-3 watts of electricity.

G3JAF states that **DUIPAR** will be on the air during the Boy Scout Jamboree in Manila during July. The transmitter will operate on all bands with a power of 500 watts, and special QSLs will be used. **G3JAF** also states that, at present, there is no activity from the South Sandwich Islands (**VP8**).

From **G2MI** comes news that the 5A (Libya) QSL bureau is being properly organized. The address for incoming cards is given in *QTH Corner*, but any specific queries about cards should be addressed to the three sub-managers: **5A5TF** dealing with U.S. stations, **5A3TQ** U.K. and Commonwealth countries, and **5A5TO** the rest of the world. Incidentally, **5A3TQ** is Ron Crowther **G3FJU** and more recently **9K2AQ**.

From **WGDXC** come the following tidbits: **Danny Weil** is at present in the U.S.A. trying to raise \$7,000 to put *Yasme III* afloat. **ZL1AV** is willing to accompany him across the Pacific, provided the boat is made ready while he is still in the States. **VR6TC** left for medical treatment in New Zealand in May, and will be away from Pitcairn Island for about a year. **ZS2MI** (Marion Island) is said to work **ZS6ANE** every Friday at 18.00 G.M.T. on 14.198 kc/s a.m. **W3CGS** is able to handle queries on **HL9KS** QSLs. An expedition to Aaland Islands **OH0** is scheduled for August 7 and 16, operated by **OH2RD**, **OH3QC** and **XYL OH3ND**.

CQ DX Contest 1958—C.W. Results

From **W1WY** (Conn.) come the results of the 1958 *CQ* World Wide C.W. Contest. The top award for a single-operator station went to **CN8JX** with 973,912 points; second was **SV0WP** (878,853) and third **KH6IJ** (767,856). The winning multi-operator station was **K2GL** (2,009,280). The top English stations were **G2DC** (358,570), **G3KKP** (291,332) and **G3BTA** (238,602). In Scotland **GM3FJP** got first place with 88,150 points, while in Northern Ireland **G13IVJ** made 243,162; the leading Welsh entrant was **GW2DUR** with 19,425 points.

DXCC using S.s.b.

The request for reports on s.s.b. activity has brought forth details of quite a number of DX stations using this mode, and these have all been reported in the following

QTH CORNER

CR9AM. P.O. Box 111, Macao.
EA0AF. P.O. Box 195, Fernando Poo.
FK8AU. P.O. Box 63, Noumea, New Caledonia.
FQ8AF. P.O. Box 2203, Brazzaville, French East Africa.
FQ8AX. via **WA6DFH**.
FY7YF. via **VE3MR**.
FY7YI. Paul Canavy, Rue des Remparts, Cayenne, Fr. Guiana.
HC1IJ. P.O. Box 691, Quito, Ecuador.
HCSMT. P.O. Box W, Cuenca City, Ecuador.
HS1E. P.O. Box 1030, Bangkok, Thailand.
ISGN. P.O. Box 16, Mogadiscio, Italian Somaliland.
KB6BH. F.A.A. Canton Is., Phoenix Is., South Pacific.
KH6CKO. P.O. Box 577, Oahu, Hawaii Is.
OD5CI. Scott, c/o U.S. Embassy, Beirut, Lebanon.
PZ1MR. via **VE3MR**.
TF2WEE. c/o International Airport, Keflavik, Iceland.
VK9DH. P.O. Box 55, Rabaul, New Guinea.
VK0TF. via **VK3YS**, F. G. Bail, 60 Shannon St., Box Hill North, E.12, Victoria, Australia.
VP2GS. P.O. Box 46, St. George's, Grenada.
VP3RO. via **VE3MR**.
ex-V55JL. 33 Graham Avenue, Te Atatu, Auckland, New Zealand.
VS9AH. Major G. R. K. Lyon, Armoured Car Sqn., Aden Protectorate Levies, B.F.P.O. 69.
OK7HZ/ZA. P.O. Box 69, Praha, Czechoslovakia.
VS9 Bureau. via **VS9AO**, Khormaksar Amateur Radio Club, R.A.F. Khormaksar, B.F.P.O. 69.
ZDI Bureau. via **ZDIEO**, S.L.E.M.E., A.P.O. Freetown, Sierra Leone.
3A2 Bureau. via **3A2AH**, 6 Rue Gastaldi, Monaco-Ville, Monaco.
5A Bureau. P.O. Box 372, Tripoli, Libya.

paragraphs. It has also produced a complaint from Jack Shields **G3FNN**, who spends a lot of time listening to the s.s.b. signals on the h.f. end of 14 Mc/s. Jack is amazed not only at the amount of rare DX that shows up between 14,300 and 14,350 kc/s but to find that the vast majority of stations rarely use their call-signs, but instead rely on Christian names. He says that it is possible to listen to both sides of a QSO for a considerable period of time before either station announces its identity in the proper manner.

An appeal comes from Peter Pennell **G2PL** who would appreciate reports on his 5 watt portable rig. Peter is active /P on 3-5, 7, 14, 21 and 28 Mc/s phone and c.w. Reports please to 1221 Foresters Drive, Wallington, Surrey.

Beda Micka, **OK1MB**, of Prague, recently received from Charles W. Boegel, Jr., of Cedar Rapids, Iowa, a gold cup, 14 in. high, in recognition of the fact that it was the contact with his station which enabled **W0CVU** to claim a DXCC certificate from A.R.R.L. for working 100 countries using s.s.b. Both operators use s.s.b. equipment manufactured by Collins Radio Co.

28 Mc/s

By the time this is read 28 Mc/s will mainly be open only in a north-south direction, but the seasonal peak of sporadic E propagation will enable the band to be used for ultra short skip contacts with stations normally within the skip zone. The best time for sporadic E is around mid-day and dusk.

As the following reports indicate, the transition from spring to summer certainly yielded a good harvest.

Eric Hancock **G3BHW** (Margate) reports for the first time and promises to do so regularly in future. Running 100 watts to a home-built rig feeding a **G4ZU** beam Eric is one of the most active and successful stations on the DX bands at the present time. On phone he worked **BV1USC** (13.35), **FB8CG**, **HS1E** (17.57), **OR4RW**, **VP7NM**, **VQ8AV**, **XE1KQ**, **XE2GR** and **ZS81**, while on c.w. he raised **KS4BB** Serrana Bank and **T19CW** Cocos Is. **G3MNV** (Romford) talked to **VS9AL** (14.13, '230), **VK6GU** (13.11, '200), **VE6QG/SU** (13.15, '350), **FB8BZ** (16.10, '150), **OR4RW** (16.09, '200), **VQ8AV** (19.20, '200), **VS1GZ** and **FQ8AF**.

Leslie Hill **G8KS** on phone found an unusual one in **TG0AA** (14.18, '410), and also worked **XW8AL** (18.07, '320), **VP9WB** (19.35, '320) with **SV0WN** Crete (18.11, '015) on c.w. "Uncle Tom" **G6UT** (Hallingbury) submits a most welcome first report

with phone signals from HI8CM (17.15, '400), XW8AK (17.05, '340), and YN4CF (17.22, '340). R. F. Stevens G2BVN (Romford) reports s.s.b. signals from XE1ZM (19.05, '650) and a.m. signals from FQ8AF (15.20, '400), DU6IV (15.45, '310) and OR4RW (15.30, '250).

Yet another newcomer to this column is John Hunter G3IMV (Bletchley) who exchanged phone reports with VQ8AD (16.03), ZS8I (16.34) and VP3MC (11.46) and c.w. reports with VP9D (17.35), TI9CW (14.08), and ZD2DCP (10.24).

Frank Whalley B.R.S.22299 is a new member and reports phone signals from FM7WU (18.15), CX, HC, HK, KZ5, OA, ZP and 9G1, while Charles Harrington B.R.S.2292 (Hounslow) heard a.m. from CR6, HI8CM, HK, HZ, KG6AIA, KR6HI, OA, PJ2, VP5RD, VP8DW, VQ8AD, YN, ZP, ZS3AG, ZS8O, 9G1 and 9K2, with c.w. from CR6, OA, TI9CW, VE3EGD/SU, VP7NM and VP9. Albert Williams B.R.S.20135 (I.O.W.) heard YAI1W (11.00), VU2CQ (10.50) and VE6QG/SU. A.1583 (Penryn) heard phone from KG6AIA (11.30), VE6QG/SU (15.30), CP5MQ (18.14), XQ8AG Chile (18.59) and OD5CA (09.25).

B.R.S.22249 (Leamington Spa) reports phone signals from EL1H (09.22, '500), XW8AL (10.32, '450), VK6AD (11.35, '200), VP3HAG (12.46, '450), HI8NT (16.13, '250), VP3MC (16.41, '500), VP5RD (19.12, '300), VU2PS (17.00, '200), VU2CQ (10.16, '350), and EL1D (17.06, '800) amongst many others.

21 Mc/s

While this band is suffering slightly from the seasonal lowering of the m.u.f. it still appears to provide the greatest volume of DX. Most reports indicate that by far the biggest proportion of DX is in the phone section of the band, but just to prove what can be found in the lowest 100 kc/s we start with an all-c.w. report from Jim Kirk G6ZO (Edware) who never misses any worthwhile c.w. DX on any band. Jim lists VQ8AD (18.00, '025), MP4BCN (18.00, '060), XE1AX (21.30, '010), VS9MB (18.00, '080), VQ5EK (18.00, '045), VQ5EZ (18.00, '015), VS5AD (14.00, '062), HC4IQ (18.30, '070), KX6CN (11.30, '050), ZM6AC (09.20, '050), VK9DH (15.45, '070), ZD6DT (15.45, '075) VP8EG (20.00, '080), ZS7M (17.30, '070), 9K2AN (19.30, '080), AP5B (21.00, '035), ZS3AG (20.40, '063), DU1FM (14.00-1830, '005-'070), FB8CD Comoro Is. (18.00, '070), KM6BK (09.00, '040), VK9AD Norfolk Is. (09.00, '080), VK9GW (12.00, '035), VP8EP (19.30, '090), OR4RW (16.00, '075), LA1VC/G (18.30, '040), JZ0HA (15.30, '070), TI9CW (19.30, '050), HS1C (15.00-16.00, '020), ISAAR (19.00, '040), BV1USB (15.00, '030), VS5JA (07.45, '085), ZS3OW (20.00, '015), FK8AB (07.30-11.00, '095). Terrific!

G3DO (Sutton Coldfield) reports phone QSOs with YAI1W (21.15, '150) and FO8AX (07.35, '150), while G3GCD (Chesterfield) found DU6IV (16.00) and HS1E (17.00) on phone and DU1FM (16.25), XZ2TH (21.05), ST2AR (10.26), ZD7SA (22.30) and FQ8HA (08.35) on c.w. G5DJ (Southgate) talked to VP8DG Port Lockroy, Antarctica (22.15, '120), ZD6DT (17.25, '180), FQ8AW (17.55, '150), FE8AP (07.55, '160), 9M2DW (23.05, '170) and VP8CX Teal Inlet, Falkland Is. (22.20, '150).

G3HAT (Ealing) who responds to our plea for s.s.b. reports worked the following by that mode: 9G1CF (07.15, '350), VP2AB (20.40, '410), PZ1MR (19.30, '400), MP4BBW (21.53, '310), and VQ5EZ (19.37, '410). His rig is of the filter type running 150 watts peak, and the aerial is a 66 ft. centre-fed with tuned feeder.

Frank Hooson G3YF (Chingford) promises to contribute regularly in future and reports phone signals from VR2BC (08.00, '192), FO8AX (09.30, '190), VS5JA (09.30, '200), KR6DU (16.15, '160), 9M2DW (15.20, '186), XQ8AG (00.00, '385), FE8AP (09.30, '156), HS1E (16.40, '190), YAI1W (15.45, '200), FK8AU (09.00, '170), KH6BDV/KJ6 (09.50, '230), KB6BH (10.00-12.00, '300), PY7SC Fernando (00.20, '192), VP8EG Orkneys. (20.15, '110) and FK8AU (09.05, '170), with CR5AR (22.20, '060) on c.w.

G3JAF (Lymington) who runs 120 watts input to a two-band (21/28 Mc/s) Quad reports QSOs with ZD1EO (19.30), FM7WS (21.23), VE8AL (21.55), VS6CL (14.30), VQ8AD (16.44), YN1SV (02.45), VK7MF (07.37), 4S7FJ (17.05), VS9MB (15.40), VP5EM (23.45), VR2BC (07.45 and 19.56), YAI1W (15.54), VU2RN (19.15), KR6DU (17.25), KR6IF (16.40), OX3KW (11.01), UA9OI Zone 18 (12.16), EL1H (17.52), HH2CL (12.35), OR4RW (18.10), XZ2SY (10.00), VP8DG (19.47), VP8DL (19.45), VP8DW (19.48), VP8EG (19.30), VP8EP (19.30), and sundry VS1 and 9M2 stations on phone, while

on c.w. he found BV1USB (11.50), XE1AX (18.36), XZ2TH (15.25), KM6BK (08.35) and ZS7M (19.03).

GW3AHN (Cardiff) reports phone QSOs with FK8AU (10.45, '150), FO8AX (07.25, '190), FY7YF (21.45, '400), HL9KS (10.30, '315), KB6BH (13.30, '320), PZ1MR (19.12, '415), TI9SB (22.53, '420), VR2AZ (07.40, '150), VR2BC (09.55, '160), VU2SS (15.40, '170), YAI1W (18.40, '180), 4S7FJ (19.40, '200) and OA4AV (08.40, '120) with c.w. from DU1FM (14.50, '075), FG7XC (18.40, '060), KM6BK (08.55, '060), TI9CW (08.22, '050), U18AG (17.10, '050), VP4DW (20.13, '025), VP8EG (20.15, '125) and XZ2TH (17.40, '050). All on 25 watts!

G3BHW reports phone contacts with VK9RO Papua and YAI1W (16.22) and c.w. with AP5B (17.55), DU1FM, FB8CD, FG7XC (whose QTH would be appreciated), JZ0HA (13.20), IP1ZGY, K6MQL/KG6, KN5RCG/KG6 (16.50), KS4BB, TI9CW, VK9DH New Guinea (16.46), VP8EG (20.15), VQ8AD, VS9MB and ZS7M (19.05). A detectable selection.

G3MVV spoke to CO3IGY (09.17, '130), VP9DL (23.10, '150), HC5MT (23.43, '250), VP5EM (00.05, '270), OX3KW (17.18, '250), 9M2DW (22.17, '100) and 9K2AL (13.02, '150). G3KSH reports c.w. from ZD7SA (22.40), MP4BCP (18.45), VQ3CF (18.50), FQ8AD (19.30), ET2KY (15.20), 4S7FJ (16.07), VK6SM (15.40) and XZ2TH (16.55) amongst many others. G6UT exchanged phone reports with VP8DW (16.12, '100) and HI8CM (12.35 and 17.15).

G8KS sends in a terrific log for this band including phone from VP8DG (19.15, '160), VP8DC (19.30, '155), VU2CK (15.06, '220), VP8EP (19.05, '110), VP8EG Orkneys (19.15, '110), VR2AZ (11.25, '200), ZS3AG (18.42, '195), EL1H (18.43, '200) 9M2FX (18.51, '035), VU2RN (14.51, '215), 9M2DW (14.55, '034), OQOPD (19.29, '191), AP5B (17.46, '052), and FM7WS (16.00, '200), while on c.w. he raised VS9MB (16.22, '030), UA0KUV (16.24, '058), XZ2TH (16.28, '062), VS1JF (16.31, '084), 4S7FJ (18.21, '030), VP8CC (19.10, '060), IP1ZGY (13.59, '040), DU1FM (14.57, '034), and VR5AC (08.40, '040).

Big DXer Jack Mann G3AAM (Birmingham) sends in a very welcome first report. Jack talked to YAI1W (15.00, v.f.o.), XE2AW (19.00, '190), VP2AB (22.45, '200), VP2DJ (22.45, '200), VS5JA (09.00, '210), FE8AH (16.20, '155), KR6CR (15.00, '170) and ZD6DT (17.45, '215), while on c.w. he located JZ0HA (14.00, '050) and XZ2TH (16.00, '050). G2BVN reports phone from OR4RW (18.20, '126), 9M2AG (18.15, '150), s.s.b. from TG9FS (21.25, '400) and c.w. from VP8EG (19.40, '100), TA1BB (19.10, '030), and VS9MB (19.00, '030).

Harry James G3MCN (Liverpool) reached 150 phone countries on the band with the help of VR2DE (08.00), ZS3AG (19.15) and 4S7FJ (18.15) and also records VP8DW, VP8CX, VP8DI, UF6AB and KA8AF. G3MMP (Pinner) spoke to SV0WY, VS1JO and HS1E, while Barry Simpson G2HAP (Manchester) talked to 3A2AF (12.45, '250), FG7XE (17.30, '250), FK8AU (09.30, '225), VP2AD (23.50, '210), VP2SL (23.15, '250), VE8AL (08.25, '230), VR2BC (08.45, '160), VR2DE (09.10, '170) and ZS8I (17.05, '170). All excellent DX Barry.

There are quite a number of reports in from our B.R.S. and A. members for this band, but it is much regretted that space will not allow for any further 21 Mc/s reports this month. However, grateful thanks to B.R.S.21969 (Barnet), B.R.S.20317 (Bromley), B.R.S.2292 (Hounslow), B.R.S.22249 (Leamington Spa), B.R.S.22299 (Preston) B.R.S.20135 (Newport, I.O.W.), B.R.S.20104 (Harrow), B.R.S.18017 (Warwick), B.E.R.S.1002 (Australia), A.1777 (Croydon) and A.1583 (Penryn).

14 Mc/s

While there is no doubt that the two higher frequency bands attract most of the DX limelight where phone operation is concerned, 20m still appears to have a slight edge on all the others where c.w. activity is the main interest.

An all c.w. report from G3YF lists the following choice morsels: VP2KR (00.30, '042), KX6CO (19.20, '050), KAOIJ Bonins (15.45, '032), OR4RW (09.45, '018), VK9DB (15.45, '080), UJ8KAA (13.50, '065), ZS7M (18.30, '055), VP8DG (00.40, '018), EA0AF (18.00, '052), U18KAE (13.55, '080), JT1AB (13.45, '058), VS9MI (17.15, '050), XW8AI (17.45, '010), TA3US (18.00, '028), W4JRD/KS4 (00.00, '007), ZS8O (17.20, '010), CP3CD (22.45, '008), FG7XE (09.35, '013), JA0AN (12.10, '058), DU1DR (16.35, '050) and IICR/MI (14.00, '045). Thank you Frank, a really nice selection made even better by the inclusion of times and frequencies, without which reports lose most of their usefulness.

G6ZO also furnishes a first rate report complete with all the time and frequency details: VP8BK (20.00, '015), VP8EL (20.00,

'008), VP8JIL (22.45, '020), EA0AF (17.45, '050), 3A2BA (08.00, '015), DU6TY (18.00, '012), 3A2CX (08.00, '050), HK0AI (22.00, '045), VK0RT (18.30, '015), ZS9M and N (17.45-19.00, '010), XE1MB (07.00, '015), VS9MC (17.30, '015), XW8AI (21.00, '080), VP8CW (19.30, '070), HH2LD (06.00 and 21.30, '010), HH2CX (06.00, '007), HV1CN (18.00, '001), VQ5GJ (19.15, '035), FK8AC (06.30, '325), FW8AA (07.00, '325), KX6CN (06.30, '090), OQ0CZ (17.45, '008), OK7KZ/ZA on s.s.b. (19.50, '295), FY7YI (20.30, '085), FY7YF (19.00, '013), KX6CU (12.00, '025), KX6CO (06.45 and 19.30, 14.008 and 14.020), K6TSQ/KG6 (19.30, '030), KM6BI (07.00-10.00, '025), KM6BL (07.00, '040), KM6BK (07.00, '040), ZK1AK (06.30-10.00, '015-025), ZK2AD (07.00, '040), VK9AD (07.00, '315), VK9GW (12.30, '010), OR4RW (18.30, '012), JZ0HA (21.00, '050), JZ0DA (19.30, '035), SV0WN Crete (20.00, '080), UM8KAB (19.00-22.00, '025), T19CW (22.00, '045), HS1C (16.00, '020), 15AAW (19.00, '020), BV1USB (17.00, '035), KC4USB (06.00, '320), FK8AT (06.30, '325), 3A2AF (07.00, '040), DU6IV (20.45, '080), DU1RTI (22.00, '025), FO8AG (07.30, '325), FO8AC (07.00, '325, '080, etc.), K6USA C.C.I.R. station Los Angeles (07.00, '020 and '040), CR8AC (20.00, '045) and VR1B (06.30, '080). A truly remarkable performance Jim.

G6UT reports phone from VK2FR Lord Howe Is. (07.00, '120), XE2AM (09.15, '120), and VP2AR (07.30, '160) and c.w. from UI8KAE (13.50, '090), UI8KBA (14.25, '100), KC4USB (06.00, '330), and KM6BJ (08.20, '015), while G2PL reports OK7HZ/ZA s.s.b. (20.25, '310) and IP1ZGY (12.25, '030). From G3DO comes the first report of YAIW being active on 14 Mc/s (18.05, '250). G3KSH found SU1MS (22.05), HH2CX (22.45), HH2LR (22.50), HP1BR (22.55), CR4AH (23.10), OY1R (22.42), ZD7SA (22.56), ZP5HK (23.10), KV4BQ (23.35), and ZD2VPF (23.15). G8KS worked VK0RT (18.31, '018), VS9MI (17.40, '060), VK0CC (11.45, '075) and KC6AO s.s.b. (11.51, '285).

G3AAM received c.w. from VQ5GK (18.00, '044), AP2AC T7 (16.30, '102), AP5B (22.30, '067), F2CB/FC (22.00, '005), FW8AA (19.30, '340), AC5SQ (11.30, '080) and EA0AF (17.15, '058). While G3MV reports c.w. signals from VK7ZZ (07.10), VE8AY (07.10), UM8KAB (23.06), HP1BR (23.36), and 3A2CZ (11.13).

G3BHQ (Chesterfield) sends in a one-band report for c.w. and lists SV0WN Crete (18.40, '110), KR6MG (20.25, '092), VE8AY (10.25, '072), VP8CW (21.00, '008), and LU1ZA (20.20, '026).

Bill Schneider K2UYG in New York worked on c.w. UA0OM, OR4VN, ZS9R, VU2MD, VK9XK, VP4DW, XE3BL, LX1RX and SM5WN/LA/P in Spitzbergen. Bill also heard AC4AX (12.00, '152) and JT1BK.

Bill Wilkinson B.R.S.20317 (Bromley) submits his usual report, and on c.w. logged UA0IJ (10.00, '040), KX6CO (19.53, '077), DU1OR (20.00, '086), IP1ZGY (23.30, '080), CE0AD (23.50, '030), HC1HM (23.00, '040), PJ2ME (23.10, '040), JZ0DA (19.45-20.30, '028), VQ6AB (20.10, '085), FQ8HD (20.00, '062), while on s.s.b. he heard VP3RO (23.02, '310), KR6DI (19.55, '300), and ZK1BS (08.33, '306). B.R.S.2292 lists c.w. from DU1OR, FM7WP, UI8AD, UI8AE, UM8KAB, VP4TR, VK9YL, XE3BL and ZD2VPF. B.R.S.20104 (Harrow) found VR3T (04.00 and 13.00, '050), KB6BH (07.00, '240), KJ6BV (11.00-13.00, '250), VK2FR (07.00, '125) and KA0IJ (15.00, '090). B.R.S.18017 (Warwick) heard KV4AA, XZ2TH (16.30), various Russian districts and FB8CL (14.005). He wonders whether this last station is on the Comoro Islands: it is believed that FB8CD is the only active station in the Comoro Is. at the present time.

Listening in N.S.W. Australia B.E.R.S.1002 heard VS5JA, FK8AV and XE1XT on phone and KG6AHW, KA0JM, VS5BY, VS4JT, KG6MAA and KX6BP on s.s.b.

The L.F. Bands

Reports are few this month but B.R.S.2249 (Leamington Spa) reports 7 Mc/s c.w. signals from YN3HSD (01.21, '100), UF6AA (01.37, '020), CR4AX (01.44, '050) and PY7AAE (05.13, '070). B.R.S.2292 (Hounslow) heard HK5XBX, CM2WS and nearly all districts of the U.S.A. while B.E.R.S.1002 (New South Wales) heard VK9XC, UAOKSA, KL7SFN, several KH6s and all districts of JA on c.w.

The only station confessing that he has worked anything on 7 Mc/s is G3BRE (Shaftesbury) who found CT2BO (23.00, '005), PY4AXN (21.15, '004), PY7ASR (22.25, '003), TF3AK

(23.40, '010), and sundry W and U stations. K4OUY was worked on 3508 kc/s at 04.15.

Top Band reports are still practically non-existent, which is not very surprising as far as long distance DX goes at this time of year, but there is still a lot of interest in chasing the rarer British counties, and this is the season for holiday DXpeditions to those normally uninhabited by resident stations. G3MWG (Mill Hill) will be active /M and /P from Cornwall between June 27 and July 11. Please send reports for the July issue as soon as possible.

Bangor—Bang-on!

THE choice of Bangor as the venue for the Northern Ireland O.R.M. on May 2, 1959 and the decision to invite the ladies to join in the day's activities, for the first time in the Region, proved very successful. An attendance of over 60 showed that the efforts to extend the social side of the occasion were not in vain.

During the morning a visit was made to Bangor Castle (site of the Town Hall) where members were entertained to coffee by the Mayor (Coun. F. C. Tughan) and shown over the very beautiful building.

A full agenda was successfully dealt with during the business meeting in the afternoon. The General Secretary G6CL opened with a most informative report on Society affairs including a reference to the 1958 I.A.R.U. Conference. Council members Arthur Milne (G2MI) and Ted Ingram (GM6IZ) then spoke on matters of special interest to G.I. Also present was Fred Lambeth, G2AIW (London R.R.) who dealt with v.h.f. activities. Topics discussed during the meeting included N.F.D. and TVI.

Later in the evening a most enjoyable dinner took place in the New Savoy Hotel at which the Mayor and Mayoress of Bangor were principal guests. EI visitors present included Sim Farrelly (EI9Y), Andy Woods (EI3L) and Harry Wilson (EI2W) who officially represented the I.R.T.S.

The R.R. wishes to acknowledge the very great assistance he received from John McMillan, GI3JXS (Belfast T.R.) and A. D. Patterson, GI3KYP (Editor of *Gee-Eye*). GI3IWD.

Mozambique DX Contest

THE DX Hunters' Club of Mozambique, Clube dos Cacadores de DX, is arranging an international DX contest for the period August 15 to August 25, 1959. Copies of the rules may be obtained from P.O. Box 875, Beira, Mozambique, Portuguese East Africa.

Scandinavian Activity Contest

AMATEURS throughout the world are invited to support the first Scandinavian Activity Contest, which will take place between 15.00 G.M.T. September 19 and 18.00 G.M.T. September 20 (Telegraphy Section) and between 15.00 G.M.T. September 26 and 18.00 September 27 (Telephony). The Contest will be organized in turn by Finland (1959), Sweden (1960), Norway (1961) and Denmark (1962).

A copy of the general rules can be obtained by writing to P.O. Box 306, Helsinki, Finland.

Jamboree-on-the-Air

THE Second International Boy Scout Jamboree-on-the-Air will take place during the weekend of October 24-25, 1959. All amateurs connected with the Scout Movement are invited to participate. Licensed amateurs having no connection with the Scouts but who would like to help will be welcome to do so. Details may be obtained from the organizer of the British section, L. R. Mitchell (G3BHK), "Katoomba," Tyneham Close, Sandford, Wareham, Dorset.

Four Metres and Down

by F. G. LAMBETH, (G2AIW) *

THE great news this month is that new world records for the 420 Mc/s band have been set up by British and Swedish amateurs.

On May 17 G2XV had a 15 minute contact with SM6ANR whose signals were RST559. G2XV's report was RST569. G3KEQ worked SM6ANR later the same day. On May 25 at approximately 23.00 G.M.T. G3HBW and G6NB both had contacts with SM7BAE (Djurslov, South Sweden). All these contacts exceed the previous world record of 500 miles set up by G3HAZ and DL3YBA on June 19, 1957 by a handsome margin. Subject to confirmation, the record is now over 600 miles.

G2XV's aerial for 420 Mc/s is a 40-element array (20 driven elements with 20 reflectors) at a height of 40 ft. and fed with 80 ohm coaxial cable. The QTH is 50 ft. a.s.l. The transmitter runs 65 watts input to a Mullard QQV06-40A. The receiver comprises a 6AM4 grounded grid r.f. stage into a CV354 diode mixer, a 6BQ7A low noise first i.f. stage and an SX28A tuning 32-38 Mc/s.

Moon Bounce

The successful transmission of signals from Jodrell Bank via the Moon to the U.S. Air Force Research Centre in Cambridge, Massachusetts, on May 15, 1959, was an historic occasion, though the idea of this method of propagation is by no means new to amateurs. Signals have been bounced off the moon by amateurs in the past but have never been used for communications purposes before. Now that the scientists have shown it can be done, it should not be long before amateurs too are making use of the idea. Perhaps here lies the answer to the long-awaited Trans-Atlantic contact on 144 Mc/s! The problems involved are immense but we have no doubt amateurs will overcome them as has always been done in the past.

Two Metres

The good weather during May brought with it improved conditions. G3JZG (Willenhall) says the band opened up on the evening of May 17 when OZ and PA signals were prominent. Seven PAs were worked, PA0LQ being the strongest at S9+ both ways. After midnight the OZs came through in strength and OZ4KO and OZ9EA were worked with 5/7 and 5/8 reports respectively. ON3NH was also heard. No SMs and only one DL (1RH) were heard. On Whit Monday a motor cycle portable was taken to a site 2m s.e. of Knighton in Radnorshire; several stations were worked in the Midlands but little from elsewhere.

G3LHA (Coventry) is now on 145.08 Mc/s. Conditions since March have been only poor to average, but many newcomers have been worked. F stations continue to appear fairly regularly, F3LP being the strongest. G3EHY was worked on May 8 at S9. On May 12 ON4XT was heard at RS56 and F3LP at RS58, but no other continentals were logged. London signals were very strong but reception was difficult owing to high noise. On May 13 G13GXP was heard at RS47 on phone on 145.75 Mc/s. G2FM and GW3GWA were both worked with heavy fading.

Conditions gradually improved from May 14 to 16 and on the 17th the band really opened with OZ and SM stations heard at S9+. OZs and PA0s were worked and SM stations heard. No signals from DL, ON or LA were heard however.

On May 23 the band was open from Scotland to Holland. GM3HLH (Crail, Fife) worked several PA0 stations, some

of whom thereby had their first GM contact. On May 24 G3GZJ/M, with fixed aerial, working with 12 watts from Woldingham, Surrey, raised several ON, PA and DL stations in excellent conditions at "fantastic" strengths. One of the stations worked was using only 3 watts!

G4LX (Newcastle-on-Tyne) reports that four Newcastle stations (G2BDQ, G3IXF, G4LX and G4QA) moved to their new zone frequencies on May 8. Others in the area will follow when they acquire the necessary crystals.

G4LX noticed aurora on April 23 (20.40), April 29 (19.00), April 30 (18.00) and May 1 (16.00). No QSOs were made but 2m was apparently affected. A further opening on May 12 (16.45) resulted in a QSO with GM3HLH/A but no others were heard. Good ducting conditions have prevailed since May 13, and QSOs have been made with ON4, OZ, PA0 and SM.

EI2W (Dublin) asks 2m operators to keep a look-out for him around 23.30 B.S.T. most nights. The aerial (an 8-over-8) at Foxrock is now up to 62 ft. EI2W's frequency is approximately 144.2 Mc/s.

G3MED (Northwich) found very few people on the band during the First 144 Mc/s Field Day on May 3. For an all-day stint the reward was only nine QSOs, and only about nine other stations were heard. Conditions were obviously not to blame as G2JF (Ashford, Kent) was S5. G3MED was told by a southern station that the majority of the activity was in the north and that the majority of these consisted of club stations "who probably had their N.F.D. operators on the key and not their 2m ops!" Many operators—including the s.s.b. ones—have suggested that it would be a good idea if a small segment of the band (about 25/50 kc/s) could be reserved as a separate zone for s.s.b. Such stations could then be easily found and an s.s.b. net would be possible without annoying anyone. The writer considers this suggestion will have to be deferred until there are many more s.s.b. stations in operation.

G5DW (Ashcott, Som.) says that conditions have been quite good. The sked with G2NY on May 7 was as usual, fading to S4 briefly with heavy static during a thunderstorm over the Mendips. Suddenly the signal went to S9+ and held at that until the end of the transmission. By the time of the next over, the cloud formation had changed and signals were back to normal.

During a trip to Zurich, G2UJ visited HB9RG and during the Swiss Activity Night worked some HBs and a DJ in Wiesbaden on 2m.

A.1491 (Palmer's Green) took all his gear to G3MVM at Goff's Oak, Herts (300 ft. a.s.l.) for the First 144 Mc/s Field Day, but nothing further than G2DTP/P on the South Downs was heard—a most disappointing contest. The period May 11 to 16 was an excellent "tropo" week to the north. The only DX heard over a long period has been G3JWQ (heard on sked twice with G8VZ), G3KHA, G3LOK and F3LP. A new station in Rotherham is G3NIH who is putting out a fine signal to the south. G3NGS/M and G3JXN/M are looking for contacts. New 2m stations heard lately include G3MZ, G3AGA, G3BRQ, G3FRF, G3GGH, G3GIM, G3JAM, G3LYK, G3MEH.

B.R.S.20133 (Melton Mowbray) is anxiously awaiting the results of the R.A.E. and in the meantime has found conditions over the latter end of the period very good indeed for G stations. F3LP was heard many times at good strength. Over 30 stations were heard during the 144 Mc/s Field Day, although nothing was coming through from the south except G5MA. G6TA has been heard for the first time and G3JMA and G3LTF were all coming in well during the week ending May 16.

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From April 15 onwards **G3HAZ** (Northfield, Birmingham 31) found things were much as usual with possibly **G3IRA** (Chiseldon) the best DX, **G3MHW** (Redditch) a new one and **G2CIW** an old one at a new QTH—Northfield! On May 2 things brightened up, particularly to the north—there was a good QSO with **G3HYH**. A certain amount of mobile activity was noticed on May 9/10 in connection with the Cheltenham Rally. On the 11th, **GW4LU/P** (Glyn Dyfrdwy) gave quite a few operators contacts with Merionethshire. London and Bristol QSOs followed that evening. Since then the band has been open G-wise every evening, but strangely enough no continentals of any consequence. On the 13th, **G13GXP** was worked at long last with one of the best phone signals yet heard from that quarter—another country and county!

G2HDR (Bristol 9) found the 144 Mc/s Field Day on May 3 disappointing. Only four portable stations were heard, all within 50 miles. Conditions improved later however and then seemed better than activity. **G3EHY** (Banwell) has been heard on several occasions working the north "like shelling peas." The best GDX heard was **G3NIH** (Rotherham).

On May 18 **G3FKO/M** at Lansdown Hill (750 ft. a.s.l. and 4m n.w. of Bath) had the happiest 2m day of his life at 20.35 G.M.T. when a CQ call on c.w. brought **SM6ANR** (Gothenburg) and a solid 10 minute QSO at 559 both ways. This is only half the story however as **G3FKO** was using only 4 watts to p.p. **6AK5s** and a halo aerial only 7 ft. above ground. This is surely almost a record for QRP on this band! **F3LP** was worked on May 14 from a 950 ft. site 7m s.w. of Newbury with the same rig. On both occasions signals were typical of ducting, i.e. steady throughout, with the barometer slowly falling from a high level. **G3FKO** thinks he was very lucky in being at the right place at the right time!

G3KHA (Bristol) worked and heard OZ, SM and PA on May 17 and **G6GN** worked a PA.

G5MA (Gt. Bookham) worked **SM6ANR** (c.w.), **OZ4KO**, **OZ9EA** and **OZ3NH** during the opening of May 17/18. All the OZs were excellent phone contacts. **SM6BTT** was heard several times during this period, but could not be raised. **SM6ANR** was also heard in QSO with **G6NB**, when he confirmed his 70cm. contacts with **G2XV** and **G3KEQ**. Whilst the writer was in Cheshire over Whitsun, he heard **G3IKV** saying he had worked **PA0FB** and **PA0BU** on May 18 at 02.00.

G3EHY (Banwell) recently resumed activity on 2m after a break of 5/6 years, mainly to add support to the 144 Mc/s Field Day on May 3, which, incidentally, produced some of the worst weather conditions in the s.w. Comparing 2m working now after so long an absence **G3EHY** finds it better than ever. The efficiency of equipment generally after much patient experimental work by some stations is most noticeable, especially the amount of work which has been put into multi-element beams. Operating techniques are generally good and activity seems good. The main regular activity still seems to be centred in the Midlands and north and CQ calls in those directions rarely go unanswered. Warwickshire, Derby, Yorkshire, Lancashire and Cheshire provide plenty of QSOs most evenings. Many low power stations come back regularly to CQ calls from the Home Counties and London. During the first two and a half weeks of May around 100 contacts, excluding locals, were enjoyed, mostly over 150 miles. **G3ILX** (Barrow-in-Furness) and **GW3HIY** (Holyhead) put in very good c.w. signals whilst **G3NIH** (Rotherham) is just like a local on phone. May 16/17 provided some good openings to Western Europe, and on the 17th the band was crowded with PA, OZ and a few SM signals, many peaking to S8/9. Several PAs and **OZ4KO** were worked, and both PAs and OZs reported that they found conditions to the English Midlands and north very good indeed. They were experiencing more diffi-

culty to the south and south-east. Early on Monday morning, signal levels were around S8 both ways, and it was possible to read PAs off the backs of their beams whilst they were working DLs. The latter, however, were not audible. The input at **G3EHY** is 50 watts to a QJE06/40 to a 6-over-6 slot-fed aerial. Operating times are 19.00 onwards most days, and Sunday mornings from 10.00 onwards.

G3MED (nr. Northwich) says conditions were quite good on May 15 and after some local QSOs, **PA0LQ** (57), **PA0FB** (53) and **PA0EZ** (329) were all worked. On the 17th conditions were excellent and by midnight signals from PA0 and OZ were very strong. Every European heard was worked. **ON4OZ** was the only station heard at 01.30 on the 18th. Signals ranged from S4 (**PA0BU** at weakest) to S9+ (**PA0LQ**). No DLs or SMs were heard. **G3MED** was on s.s.b. part of the time whilst working PAs and OZs.

Scotland

GM2FHH (Aberdeen) reports on the opening of May 16/17, when **SM6ANR**, **SM6PV**, **OZ3NH**, **OZ6CK** and **OZ4KO** were all worked. No other area was worth mention except a few Gs! April was a new "low" with only eight QSOs during the whole month. **G5YV** was worked on four occasions. A first contact was made with **G3IOE** (Newcastle). **GM2FHH** says he never seems to hear the Newcastle "big guns" and presumes they do not look northwards.

Wales

B.R.S.20284 (Prestatyn) reports that members of the Flintshire R.S. went portable on May 3 as **GW2FVZ/P**. The site was at Gwaengsgor, 4m n.e. of Rhyll at 800 ft. a.s.l. Although conditions were generally good, only 29 stations were worked, which is ascribed locally to the fact that the contest was c.w. only. Remembering the British entry for last September's European V.H.F. Contest however (which permitted phone) **G2A1W** doesn't think this is the whole reason, or necessarily the reason. As so many people want c.w. will someone please comment on this vexed point?

GW3MFY (Bridgend) heard **G13GXP** on May 10 during a good period which started about May 8. He was not worked then however, although **G6NB** was heard working him. On May 13, **G13GXP**'s carrier was heard again on approximately 145.8 Mc/s and a c.w. QSO followed. The direction is screened for **GW3MFY** and the result is accordingly quite creditable. **GW3MFY** suggests that if a few northern stations will look s.w. as well as s.e. this screening effect may be proved to be less than was feared! **F3LP** was worked the same evening at S8 on phone but faded out before the QSO could be completed. Thus, in an apparently dead band, two stations in different directions at 200 miles distance, were worked! Where were all the Home Counties stations? Conditions for the 144 Mc/s Field Day were very poor, the only portables heard being **GW3ATM/P**, **G3AYT/P** and **G2DTP/P**.

GW8UH (Cardiff) heard three OZ stations for the first time on May 17 at 23.00 B.S.T. Their phone signals were very weak but **OZ9EA** was identified. Another is believed to have been **OZ4KO**. All could have been worked on c.w. but the phone was only S2.4.

Seventy Centimetres

After six months' absence, **G3LHA** (Coventry) was persuaded by **G2FNW** to get back on 420 Mc/s and on May 16 worked **G2FNW** for a test. A CQ brought a call from **G3KEQ** (S9) followed by **G2HDJ** (Middx.) and **G8AL**. **G3LHA** thinks the Saturday Activity Night is a good thing.

G3HAZ has only worked **G3BA**, **G3KPT** and **G3MYX/T** on this band lately, but says they are all getting their "iron-mongery" polished up, so developments can be expected shortly.

G3MED (Northwich) has his 420 Mc/s gear working and has made some slight improvements to the converter. QSOs on the band are invited!

Four Metres

G5MR (Hythe, Kent) forecast the first ionospheric opening for this year as being imminent, and on May 17 it duly happened; at 13.33 G.M.T. he had a phone contact at S9++ both ways with **FA9VN**, who had just worked **F8QL** (Beauvais). A few minutes later **G2JF** (Wye, Ashford, Kent) also raised **FA9VN** for a first phone QSO. The past four weeks have been the liveliest experienced by **G5MR**, with excellent conditions at times. The outstanding dates were April 17/19, May 5/6, and 12/13. **G3FIJ** was worked for the first time on May 10. The total of French stations heard on the band is now 43, of which 19 have been worked; further contacts are likely as many more are now tuning the G band. **F8VG** (Boulogne S/M) calls **CQ G** on c.w. almost every evening at about 20.30 G.M.T.

There has been much evidence of ionospheric propagation lately—on May 14/15 at 13.30 G.M.T. the band between 70 to 72 Mc/s was full of f.m. broadcast signals (speech and music) from between n.e. and e.n.e. They seemed to be from Russia, although **G5MR** is not positive, but the signal strength was "colossal," with deep fading associated with sporadic-E. Nothing was heard from the south on these occasions.

G4LX (Newcastle) reports a Dutch f.m. broadcast at 11.45 on May 17 on 68 Mc/s. Otherwise **G4LX** hears nothing on this band! **G4LX** monitored **ZE2JV** on 6m for 30 minutes solid on May 17 at 17.00 at S7.

G3IUL (Bedfont) and **G2DD** (Stanmore) had both worked 24 stations on 4m up to May 23 but activity is low at the present time and they would particularly welcome contacts to the south as **G3JHM** seems to be temporarily off the band. It is understood **G3CLW** will be on 4m again during the summer. **G3IUL** listens most evenings and is available for tests at any time.

Poor Operating

There is a great deal of very slack signing on the band these days—mumbled call-signs and sometimes no call-signs at all! Apart from licence requirements there are many assiduous B.R.S. and other listeners who hang on to almost every word the transmitting amateur says, and it is very annoying when it is not even possible to decipher the call-signs. Please use clear phonetics and repeat more than once—it will be a lot of help to the listeners and to yourself!

Holiday /P and /M News

G3HRH (Welwyn Garden City) is going to Nottingham in July and hopes to put a few of the rarer counties on the v.h.f. map again. The programme is as follows: Saturday July 11 10-12 a.m. Huntingdonshire, 1-4 p.m. Rutland and 5-7 p.m. Leicester. Sunday July 19 10-12 a.m. Leicester, 1-4 p.m. Rutland, 5-8 p.m. Huntingdon. (All times approximate.) **G3HRH**'s frequency is 144.72 Mc/s, phone only, and he will be stationary at a suitable high location in each county.

G6SN of Birmingham 21 will be at Morthoe (North Devon) from July 11 to 25. His frequency is 144.45 Mc/s. Likely operating times are 20.00/21.30 B.S.T. on most weekdays and midday on Sundays, weather permitting.

G2BDQ will be in Guernsey until June 23 with mobile 144 Mc/s gear, operating as **GC2BDQ/M**.

U.H.F. Articles Wanted

THE Editor will be pleased to consider for publication descriptions of aerial systems and simple low-power equipment for use in the 23-25cm (1215-1320 Mc/s) band.

An offer of a short series of articles on u.h.f. planning design and plumbing will also be considered.

Cheltenham Mobile Rally

SOMETHING entirely new in the way of contests for mobiles was successfully arranged by the Cheltenham R.S.G.B. Group and Cheltenham Amateur Radio Society at the Mobile Rally held at Montpellier Gardens, Cheltenham on Sunday, May 10, 1959. The weather was hot and the static level on Top Band was high.

About 90 mobile stations attended the Rally but the number of contest entries was less than had been expected. The contest was set out to test the efficiency of the mobile stations and it soon became evident that to win, a team needed a mobile station with a punch, the ability to QSY anywhere in the band, a knowledge of map-reading, a good driver and a normal amount of luck.

The contest was run on the following lines: Five out-stations were posted at pre-arranged points in the hills around Cheltenham. At 2 p.m. for ten minutes these stations transmitted their locations as six-figure map references. Each station was on a different frequency. Competitors had to contact and visit each station within a given time (two hours) with 20 minutes to return to the Rally headquarters. Points were scored for each visit and each contact. Further points were scored for contacts with other mobiles and for contacts with fixed stations over ten miles away.

The winner, Mr. F. James (**G6NW/M**) of Hayes, Middlesex, set a high standard but he was closely challenged.

Runner-up to **G6NW/M** with 415 points was **G3DTG/M** (385 points). The latter could have won but he missed his way and just failed to make the last control point in time and therefore lost 50 points. **G3KSW/M** was third with 366 points.

Unexpected hazards appeared in the form of a herd of cows which almost prevented **G5PP/M** from visiting an out-station in time. A youth parade held up another mobile who was also running out of time.

The organizers provided an interesting circuit and all who took part in the event found it thoroughly enjoyable, if somewhat hectic.

The contest was monitored by the Rally headquarters station **G3GPW/P** (the Cheltenham Club call-sign), operated by **G3HCB** using **G3GMN**'s equipment with **G8ML**'s 80 ft. Unimast as a vertical radiator. Another monitor, **G3KFT/M**, toured the "course" and in response to a plea on the contest emergency channel, arranged for help to be dispatched to one competitor who had a mechanical breakdown at a remote point.

Compliments on the organization were many. There was favourable comment too on the snappy operating by the "talk-in" operators **G3JJT** and **G3CEG** before the contest began.

G3BCC.

Silent Keys

C. BASSFORD (G3PH)

With regret we record the death on April 29, 1959, of Mr. C. Bassford (**G3PH**) of Nuneaton. Mr. Bassford will be much missed by amateurs in the Midlands who will remember his cheery voice on Top Band.

Sympathies are extended to his widow and her family.

C.T.B.

HERBERT TEE (G8DC)

It is with much sadness that we record the passing of Herbert Tee (**G8DC**) of Burnley, Lancs. Mr. Tee was first licensed in 1936, but prior to that year he had held the A.A. call 2ATY, and before that was B.R.S.2154. His interest in radio dated back to the early 1920s when KDKA was real DX on the broadcast bands.

G8DC's main interest was not so much in operating a transmitter but in designing and building his own apparatus. He was especially interested in speech equipment. In addition he was a keen photographer.

Sympathies are extended to Mrs. Tee, Senior, to his son Harry Tee (**G8UA**) and to the other members of the family. Mr. Tee was 63 years of age.

Society News

R.S.G.B. Approved for Purposes of Section 16, Finance Act, 1958

THE Council is pleased to report that the Commissioners of Inland Revenue have approved the Society for the purposes of Section 16, Finance Act, 1958.

The circumstances and manner in which members may make claims to income tax relief are described in the following paragraphs:

Commencing with the year to April 5, 1959, a member who is assessable to income tax under Schedule E in respect of the emoluments of an office or employment is entitled to a deduction from those emoluments of the whole of the annual subscription which is due and payable by him to the Society in the income tax year provided that:

- the subscription is defrayed out of the emoluments of the office or employment, and,*
- the activities of the society so far as they are directed to all or any of the following objects:*
 - the advancement or spreading of knowledge (whether generally or among persons belonging to the same or similar professions or occupying the same or similar professions).*
 - the maintenance or improvement of standards of conduct and competence among the members of any profession.*
 - the indemnification or protection of members of any profession against claims in respect of liabilities incurred by them in the exercise of their profession;*

are relevant to the office or employment, that is to say, the performance of the duties of the office or employment is directly affected by the knowledge concerned or involves the exercise of the profession concerned.

A member of the Society who is entitled to the relief should apply to his tax office for Form P.358 on which to make a claim for adjustment of his PAYE coding.

Geneva Radio Conference

THE G.P.O. have now confirmed that arrangements have been made for R.S.G.B. representation, in an advisory capacity, in the United Kingdom delegation to the Ordinary Administrative Radio Conference due to open in Geneva on August 17, 1959.

Mr. L. E. Newnham, B.Sc., G6NZ (Immediate Past President) has accepted the invitation of the Council to represent the R.S.G.B. during the early weeks of the Conference.

City and Guilds of London Radio Amateurs' Examination

THE entry for the May 1959 examination reached an all-time high figure of 1,220. This compares with 721 in 1958. The increase is, without doubt, due to the withdrawal of the exemption system by the G.P.O.

Southampton O.R.M.

MEMBERS in Region 17 are asked to note that the date of the Southampton O.R.M. has been changed from October 11, 1959, to September 20, 1959. The new date has been chosen to avoid a clash with an important local R.A.E.N.-St. John Ambulance Brigade exercise fixed for October 11, 1959.

R.S.G.B. Contest Forms

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

GB2RS SCHEDULE

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

Frequency	G.M.T.	Location of Station
3600 kc/s	10.00	London
	12.00	Yorkshire
145.55 Mc/s	11.15	Beaming south-east from Leeds
	11.30	Beaming south-west from Leeds
	11.45	Beaming north from Leeds
145.3—	12.00	Beaming north from London area
145.4 Mc/s	12.15	Beaming west from London area

Representation

The following have been appointed County Representatives for the year 1959:

REGION 10—PEMBROKESHIRE, CARDIGANSHIRE & CARMARTHENSHIRE

G. C. PRICE, T.D. (GW2OP), Hilcourt, Freshwater East, Pembroke, S. Wales.

REGION 14—AYRSHIRE, BUTE, DUMFRIES, KIRKCUDBRIGHT & WIGTOWNSHIRE

D. TANNOK (GM2BUD), 45 Sunnyside Crescent, Mauchline, Ayrshire.

Affiliated Societies Representatives

THE following have been appointed Affiliated Societies Representatives for the year 1959:

BRADFORD AMATEUR RADIO SOCIETY: J. L. PEEVOR (G3NFH), 12 Oak Bank, Gaisby, Shipley, Yorks.

NEWBURY & DISTRICT AMATEUR RADIO SOCIETY: ERIC SMITH (G3JMT), 26 Haddon Drive, Woodley, Nr. Reading, Berks.

YORK AMATEUR RADIO SOCIETY: G. F. NOTTINGHAM (G3DTA), 23 Abbotsway, Muncastergate, York.

DEPUTY GENERAL SECRETARY

THE Council of the Radio Society of Great Britain, invites applications for the post of Deputy General Secretary from men between the ages of 28 and 40 years.

Candidates must possess a sound knowledge of general office administration and have good organizing ability. Experience of Amateur Radio desirable. Commencing salary will be in the range £800 to £1,000 per annum depending upon age, experience and qualifications. Pension scheme available after a probationary period.

Applicants, who must be British, should submit two recent testimonials and give full details of their qualifications and previous experience. A copy of a recent photograph should also be furnished. Applications in the candidate's own handwriting and marked "Confidential D.G.S." must reach the General Secretary, Radio Society of Great Britain, New Ruskin House, Little Russell Street, London, W.C.1, not later than ten days after the publication of the June 1959 issue of the R.S.G.B. Bulletin. Canvassing will be a disqualification.

R.A.E.N. Notes and News

By E. ARNOLD MATTHEWS (G3FZW) *

A CHANGE in the rules governing the appointment of Area Controllers has been made by the R.A.E.N. Committee as it has been found that the old procedure was not suited to the requirements of small communities. In future A.C.s may be appointed (a) upon the nomination of five R.A.E.N. members residing within the area concerned; or (b) directly by the R.A.E.N. Committee in an acting capacity subject to substantiation at a later date.

Development

Steadily and surely the gap in coverage between London and the Midlands is being closed. G3VK's latest report states that there has been an immediate and enthusiastic response to his circular announcing the intention to form a group in the **Thames Valley**. (A group has now been formed.—Ed.)

With the co-operation of **Wolverton A.R.S.** a meeting was held on May 1 to expedite the extension of coverage and activity in Buckinghamshire. There was a good attendance by local amateurs. The principal speaker was C. L. Fenton (G3ABB), Vice-Chairman of the R.A.E.N. Committee. Representatives of Bucks. Police and St.J.A.B., and Bedfordshire Police attended.

R.A.E.N. Committee has accepted an offer by the Essex C.C., C. H. L. Edwards (G8TL), to foster interest in **Hertfordshire** with a view to forming groups in the county.

On May 21 the Birmingham C.C., G3CNV, accompanied by the North Birmingham A.C., G3LNN, attended a meeting of B.T.H. Radio Society at **Rugby** to discuss the formation of a group there. He found that considerable interest exists and that group members already have some equipment which could be turned to good account in emergency. A committee has been formed to consider detailed plans for R.A.E.N. G3CNV's report also expresses his thanks to members of B.T.H.R.S. for their wonderful hospitality.

Around the Group

G3KEP, **Bingley, Yorks. A.C.**, whose mobile equipment won him a prize at the recent North Midlands Mobile Rally, reports that group activity continues steadily. Two mobiles and six "walkie-talkies" are now available. If the latter are up to the standard of that which G3KEP demonstrated to the writer they should be classed as /P stations in performance! Field exercises are to be held in the next few months; the Sunday morning net schedule continues unchanged at 09.00 G.M.T.

The recent Cornish Mobile Rally at Penryn gave local R.A.E.N. members welcome practice in mobile working, reports the C.C., G3AET. The **Cornish** net schedule has been changed to 19.00 G.M.T.

The **Isle of Man C.C.**, GD5SF, is building a transistorized transmitter for 160m.

The **Birmingham C.C.** plans to hold exercises in June and is considering the advisability of transferring operations to 2m. There is some difficulty due to the small amount of 2m mobile equipment in his area, and a typical local attitude was expressed by a member in a recent contact with G3FZW. "I have thought about going down to 2m but won't do so until there are more stations active on the band." And so this "After you, Cecil," "No! After you, Claude" attitude inhibits 2m mobile development in the area despite reports in *Four Metres and Down* that indicate there is sufficient activity in the Midlands to justify acquisition of equipment for the band. The writer's opinion is that the problems associated with night operations in Birmingham would be solved to a very large extent by the use of v.h.f.

* 1 Shortbatts Lane, Lichfield, Staffs.

An area where v.h.f. is of less value than 160m is North Wales, and on May 4 the Cheshire C.C., G3ERB discussed R.A.E.N. with members of **Flintshire R.S.** He reports that considerable interest was shown. After his talk there was a discussion of the technical problems of operating in this mountainous area. It was stated that none of the business radio services in the area have any emergency power supplies for their base stations so there would seem to be every justification for a R.A.E.N. group.

Personnel

Mr. T. Griffin (G3GUV) has resigned from the office of County Controller for North Yorkshire and Co. Durham.

The following have been appointed Area Controllers: F/Sgt. R. Lang (G3KAY), Sgts. Mess, R.A.F. Colts Hall (North-east Norfolk); F. H. Lawley (G6ZG), "Summerholme," Ormesby Road, Caister-on-Sea, Gt. Yarmouth. (Caister-on-Sea, Gt. Yarmouth and Gorleston.) K. R. Duce (B.R.S.12502), 9B Marmion Road, Sefton Park, Liverpool 17. (Liverpool.)

HARLOW MOBILE RALLY

The Village Hall, Magdalen Laver, Essex

Sunday, June 21, 1959

Organized by Harlow and District Radio Society.

MALDON MOBILE RALLY

Recreation Ground, Maldon, Essex

Sunday, July 5, 1959

RALLY STATIONS

G2BCX/P on 1980 kc/s. G3KVF/P on 3700 kc/s
(both located at the Rally Site)

G3HTC/P on Danbury Common will be using one of the following frequencies: 144.12, 144.5, 144.8, 145.0, 145.4 or 145.5 Mc/s, depending on conditions due to the Second 144 Mc/s Field Day. G3HTC/P will be linked by radio to the Rally Site.

Organized by the Amateur Radio Mobile Society.

NEW FOREST MOBILE RALLY

Stoney Cross Aerodrome, near Southampton

(7½ miles west of Southampton on the A31, N.G.R. 41/250118)

Sunday, July 19, 1959

RALLY STATIONS

G3KCI/P—1900 to 2000 kc/s. G2HIF/P—144.72, 145.00 or 145.35 Mc/s.

Both stations will be active from 10.30 B.S.T. and mobiles are asked to contact them as soon as possible on their way to the Rally and to report progress periodically.

Organized by the Bournemouth and Ringwood Amateur Radio Societies.

Hi-Fi Year Book

THE 1959 Edition of *Hi-Fi Year Book* contains more than 450 photographic illustrations and 25 diagrams. It also includes illustrated editorial features about stereo pick-up manufacture, loudspeaker testing, trends in amplifier design and the use of microphones. The Directory Sections cover the addresses of manufacturers, specifications and prices of a wide range of hi-fi equipment.

The Year Book runs to 240 pages and is obtainable from Miles Henslow Publications Ltd., 99 Mortimer Street, London, W.1, price 10/6 (by post 11/6).

Regional and Club News

Aldershot and District Amateur Radio Society.—At the recent A.G.M. G2FNQ was elected President. The *Hon. Secretary* is now J. E. Fuller (G3IQE), 9 Laws Terrace, Aldershot, Hants. The Society continues to meet at the Cannon Hotel every other Wednesday.

Bristol.—About 65 members were present at the May meeting when G. A. Bird (G4ZU) gave a talk on "Transistorized Equipment for the Amateur." A demonstration was given of a number of simple transistor-operated transmitters and receivers, as well as several other items. Nearly 500 members of the R.S.G.B. and the Bristol and South-West Centre of the Television Society, and their friends, attended the Mullard Film Show on May 21. The meeting on June 19 will feature a talk and discussion on members' equipment and anyone with suitable items to demonstrate is invited to bring them along to the meeting. *Hon. Secretary:* D. F. Davies (G3RQ), 51 Theresa Avenue, Bishopston, Bristol 7.

British Two Call Club.—Jim MacIntosh (GM3IAA, ex-VS1AA) is President of the Club for 1959 with Bob Collins (ZC4CH, G2HIL) acting as Vice-President. British subjects who have held at least one overseas call-signs are eligible for membership, details of which can be obtained from the *Hon. Secretary*, G. V. Haylock (G2DHV) 167 Engleheart Road, London, S.E.6. The annual subscription of 2/6d. carries with it the Club quarterly newsletter *QTC* which is sent free to members. Non-members may subscribe at the rate of 5/- a year.

Cornish Radio and Television Club.—The club held its first Hamfest and Mobile Rally at King's Arm Hotel, Penryn, on May 3. Winner of the Mobile Contest was G3XC/M with G3WW/M and G3GDC/M runners-up. Many valuable prizes were distributed in connection with the raffle. The Club's transmitting shield was presented to E. Carter (G4IV) for consistent good operating and for his R.A.E.N. efforts. The S.W.L. shield went to W. Locke for scoring the highest marks among club members in the recent R.A.E.N. Rally and the Good Work cup to J. Brown (G3LPB/T) for his efforts on behalf of the club. The Hamfest and Rally attracted an attendance of about 100 members and friends. The club is due to meet on July 1 at Falmouth Y.M.C.A. at 7.30 p.m. when visitors to the town will be warmly welcomed. The Cornwall Technical College at Redruth will be the venue for a meeting on August 5. *Hon. Secretary:* G. Hubber, 9 Cardrew Terrace, Redruth.

Crosby Amateur Radio Society.—The name of the Society was recently changed from West Lanes. Radio Society. Technical and Morse classes are held on alternate weeks and normal club meetings take place each Tuesday at 8.30 p.m. A talk on Swedish Amateur Radio Camps will be given by G3JUB at the meeting to be held on July 7. *Hon. Secretary:* A. Treanor (G3FZG), 13 St. John's Road, Liverpool 22.

Halifax and District Amateur Radio Society.—At the meeting on May 5 society funds benefited by about £6 as the result of a sale of surplus equipment donated by J. H. Bateman (G6BX) and others. Meetings are held on the first and third Tuesday in each month. *Hon. Secretary:* A. Robinson (G3MDW), Candy Cabin, Ogden, Halifax.

Lothians Radio Society.—A visit to Edinburgh Airport, attended by 24 members, proved to be an outstanding success. Members inspected the Air Traffic Control Centre and installations in the vicinity of the Airport. Details of future activities may be obtained from the *Hon. Secretary:* L. Lumsden, 33 Hillview Drive, Edinburgh 12.

Nottingham.—The Amateur Radio Club of Nottingham are to take part in the Sherwood Community Association Garden Fete on June 20, when G3EKW will be on the air all day. On June 23 a talk and demonstration of the Mimephone will be given by its inventor, M. J. Staines. Morse practice classes and constructional facilities are among the amenities available to members. The club meets every Tuesday and Thursday at 7.15 p.m. at Woodthorpe House, Mansfield Road. *Hon. Secretary:* E. C. Weatherall, 16 Avebury Close, Clifton, Nottingham.

Ravensbourne Amateur Radio Club.—Meetings are held every Wednesday evening at Malory Secondary School, Launceston Road, Downham, Kent (near 36A, 94, 124 bus routes). The club transmitter (G3HEV) is operated by G2DHV, G3FTI, G3MOW, G3MPX. Top Band and 10m nets are a feature of

club activities. *Hon. Secretary:* J. Wilshaw (G3MPX), 4 Station Road, Bromley, Kent.

Reigate Amateur Transmitting Society.—A demonstration of Amateur Radio will be given at the Nutfield Church Fete, (Surrey), on Saturday, June 27 when G3KAX/A hopes to be active on all bands from 1.8 to 144 Mc/s. Recent publicity has proved successful and the outlook for this new society is most encouraging. *Hon. Secretary:* F. D. Thom (G3NKT), 12 Willow Road, Redhill, Surrey.

Torbay Amateur Radio Society.—Two stations (G3GDW/P and G3NJA/P) were operated during N.F.D. The club call G3NJA has also been heard recently from a Hobbies Exhibition organized by Newton Abbott Rotary Club and from a function arranged by the local Boy Scouts Association. Morse classes for beginners are held at Club Headquarters (Y.M.C.A., Castle Circus, Torquay) on Tuesday evenings from 7.30 p.m. The club also meets on Friday evenings. *Hon. Secretary:* G. Western (G3LFL), 118 Salisbury Avenue, Barton, Torquay.

Can You Help?

- D. Byrne (G3KPO), Jersey House, Eye, Peterborough, who requires information on the CR150 and CNY1 receivers?
- J. McNab (GM2CQ1), 166 Kingswood Drive, Kings Park, Glasgow, S.4, who requires information on the Indicator C.R.T. Type X.7375?
- N. Pride, 100 Raikes Lane, Birstall, near Leeds, who requires information on the Indicator Unit Type 248A I.D. QB/6414, part of the Monitor Type 56A (manufactured by McMichael)?
- F/S. A. Robbins (G3KMF), 19 Newall Avenue, R.A.F. Watton, Norfolk, who requires the instruction manual and circuit diagram for the ex-U.S. Navy Receiver type RU19?
- G. A. Smith (B.R.S. 22194), The Rise, St. Peters School, Clifton, York, who requires the instruction manual for the Type 12 Transmitter?
- J. M. Nisbet (A.1771), 57 Haling Park Road, South Croydon, Surrey, who requires information on fitting an S meter to a CR100 receiver?
- W. G. Simpson (G3GKS), 4 Nelson Road, Wanstead, London, E.11, who requires the manual for the Hallcrafters HT11B Transmitter-Receiver?

EXPERIMENTAL RADIO ENGINEERING

By E. T. A. RAPSON, M.Sc. (ENG.), A.C.G.I., D.I.C., M.I.E.E., etc. New and up-to-date 4th Edition. This book sets out a number of experiments and methods of measurement suitable for a three- or four-year course in radio engineering at a technical college. In this new edition thirteen new experiments on transistors, discriminators, oscillators and other topics are included and the chapter on radio receiver tests has been rewritten. From all booksellers, 12/6d. net.

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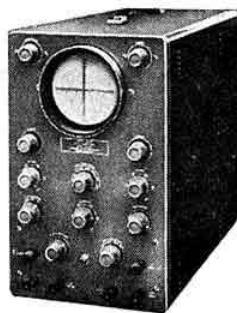


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TAS/CI. 13

Forthcoming Events

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

REGION 1

Blackpool (B. & F.A.R.S.).—Tuesdays, 8 p.m. Squires Gate Holiday Camp; July 7, Film Strip Lecture.

Bury (B.R.S.).—July 14 (General Discussion), George Hotel, Kay Gardens.

Crosby (C.A.R.S.).—Tuesdays, 8.30 p.m., "Colonsay," Crosby Road South, Waterloo, Liverpool, 22.

Liverpool (L. & D.A.R.S.).—Tuesdays, 8 p.m., Gladstone Mission Hall, Queens Drive, Stoneycroft.

Macclesfield (M. & D.R.S.).—June 16, 30, July 14, 28, "The Bruce Arms," Crompton Road.

Manchester (M. & D.R.S.).—July 13, August 10, 7.30 p.m., Wellington Hotel, Nicholas Croft, High Street, off Market Street.

Manchester (S.M.R.C.).—Fridays, Ladybarn House, 17 Mauldeth Road, Fallowfield, Manchester, 20.

Preston (P.A.R.S.).—June 17, July 1, 15, 7.30 p.m., The Fruitierers' Club, High Street.

Stockport (S.R.S.).—June 17, July 1, 15, 8 p.m., The Blossoms Hotel, Buxton Road.

Wirral (W.A.R.S.).—June 19, July 3, 17, 8 p.m., No. 4 Hamilton Square, Birkenhead.

REGION 2

Bradford (B.A.R.S.).—June 23 (Talk by L. A. F. Stockley, G3EKE); July 7 ("Colour Photography," A. R. Bailey, G3BN); July 21: 7.30 p.m., Cambridge House, Little Horton Lane.

REGION 3

Birmingham (M.A.R.S.).—June 16, July 2, 7.30 p.m., Midland Institute, Paradise Street. (Slade).—June 19 ("The Design of D/F Receivers," G3HKC and C. N. Smart), July 10, 7.30 p.m., The Church House, High Street, Erdington.

Coventry.—June 26 ("Radio Theory," J. Boyce), July 17 ("Radio Theory"), 7.30 p.m., Vine Street Schools. (C.A.R.S.).—June 15, 22, 29, July 6, 13, 7.45 p.m., 9 Queens Road, Coventry.

Sutton Coldfield.—June 18 ("P.O.W. Radio," G6SN), 7.30 p.m., School Hall, Versey Gardens, Mill Street.

Stourbridge and District (St.A.R.S.).—June 26, 8 p.m., "White Horse," Ambleside; July 7 (Talk or Film Show), 8 p.m., Brotherhood Hall, Scotts Road, Stourbridge.

Wolverhampton.—June 22, July 13 (Annual Exhibition and Competition for Home-built Gear), 8 p.m., Nechells Cottage, Stockwell Road, Tettenhall.

REGION 4

Derby (D. & D.A.R.S.).—June 17 (Direction Finding Practice Run); June 29 (Beginners' Demonstration); July 1 (Auction Sale of Surplus Items); July 8 (The Derby Wireless Club); July 15, 7.30 p.m., Room No. 4, 119 Green Lane, Derby.

New Mullard Publication

Mullard Circuits for Audio Amplifiers is in essence a symposium of many circuits which have been described in various magazines or which have appeared in the form of booklets or leaflets. Additionally, circuits only recently released by the Mullard Laboratory make their first appearance.

The object of the book is to present the most up-to-date version of the published circuits together with the new stereophonic circuits in a way which will be useful and convenient to equipment manufacturers, service engineers and home constructors. Printed on art paper and lavishly illustrated, Mullard Circuits for Audio Amplifiers can be obtained from radio dealers, price 8/6.

Derby (D.S.W.Exp.S.).—Sundays, 10.30 a.m.; June 18, 25, July 2, 9, 16, 7.30 p.m., Club Room, Nunfield House, Boulton Lane, Alvaston, Derby.

Leicester (L.R.S.).—June 15, 22, 29, July 6, 13, 7.30 p.m., Old Hall Farm, Braunstone Lane, Leicester.

Lincoln (L.S.W.C.).—June 17, July 1, 15 (R.A.E. Classes), 7.30 p.m., Technical College, Cathedral Street.

LONDON MEMBERS' LUNCHEON CLUB

will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, at 12.30 p.m. on Fridays, June 19, July 17 and August 21, 1959. Telephone table reservations to HOL 7373 prior to day of luncheon. Visiting amateurs especially welcome.

REGION 6

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

REGION 7

Acton, Brentford and Chiswick.—June 16 (N.F.D. Inquest); July 21 ("Receivers" by G3JXC), 7.30 p.m., A.E.U. Rooms, 66 High Road, Chiswick.

Bexleyheath (N.K.R.S.).—June 25 ("Receiver Servicing," L. J. Landon); July 9 (Film Show), Congregational Hall, Clock Tower, Bexleyheath.

Barnet (B. & D.R.C.).—June 30 ("Interference Suppression," G.P.O. Lecture), 8 p.m., The Red Lion Hotel, High Barnet.

Chingford.—June 19, July 3, 8 p.m., for venue phone SIL 1740.

Croydon (S.R.C.C.).—July 14, 7.30 p.m., "Blacksmith's Arms," South End, Croydon.

Ealing.—Sundays, 11 a.m., ABC Restaurant, Ealing Broadway, London, W.5.

East Molesey (T.V.A.R.T.S.).—June 21 (Visit to West Wittering); July 8 ("Inexpensive Approach to Stereophones," H. Beaumont), Carnarvon Castle Hotel, Hampton Court.

Enfield and District.—June 20, 3 p.m., George Spicer School, Southbury Road, Enfield.

Harlow and District.—Thursdays, 7.30 p.m., rear of G3ERN (G. E. Read), High Street, Harlow.

Holloway (G.R.S.).—Mondays and Wednesdays (R.A.E. and Morse), Fridays (Morse and Club), 7 p.m., Montem School, Hornsey, London, N.7.

Ilford.—Thursdays, 8 p.m., G2BRH, 579 High Road, Ilford.

Kingston.—Lectures alternate Thursdays, Theory and Morse classes weekly, 7.45 p.m., Y.M.C.A., Eden Street, Kingston-on-Thames.

New Cross (C.A.R.S.).—Fridays, 7.30 p.m., 225 New Cross Road, London, S.E.13.

Norwood and South London.—June 18 (Junk Sale), July 18 ("Communications Receivers," by G6HD), 7.30 p.m., Windermere House, Westow Street, Crystal Palace.

Romford (R. & D.A.R.S.).—Tuesdays, 8.15 p.m., R.A.F.A. House, 18 Carlton Road, Romford.

Welwyn Garden City.—July 9 ("Calling all Cars"—evening outing to place of radio interest).

REGION 9

Bath.—July 20, 7.30 p.m., 12 James Street West, Bath.

Bristol.—June 19 ("Modern Amateur Equipment"); July 17 (Demonstration of Heathkit Equipment), 7.15 p.m., Carwardine's Restaurant, Baldwin Street, Bristol.

Exeter.—July 9, 7.30 p.m. ("Films"), Redcroft, Clifton Hill, Exeter.

Torquay.—July 11, 7.30 p.m., Y.M.C.A., Castle Road, Torquay.

Yeovil.—Wednesdays, 7.30 p.m., Grove House, Preston Road, Yeovil.

REGION 10

Cardiff.—June 17 (Visit to B.B.C. Transmitting Station, Wenvoe; assemble on site, 7.15 p.m.); July 13 (Junk Sale); August 10 ("A Transistorized Automatic Key," GW3LEF), 7.30 p.m., "British Volunteer," The Hayes, Cardiff.

Penarth.—July 27 ("Telecommunications" by L. Osmonde, GW2BBO), Y.M.C.A. Hall, Penarth.

REGION 11

Prestatyn (F.R.S.).—June 15 (Field Days); July 6 (D/F Hunt), 7.30 p.m., Railway Hotel.

REGION 12

Aberdeen.—July 7, Aberdeen Members' Luncheon Club, 12.45 p.m., Royal Athenium Restaurant, Phone GM3HTL, Aberdeen 34928, for reservations.

Aberdeen (A.A.R.S.).—June 19 (Recorded Lecture on Aerials); June 26 ("Hints and Kinks"); July 3 ("Beginners' C.W. Transmitter"); July 10 (R.A.E.N. Discussion); July 31 ("Stereophonic and Hi-Fi Sound"), 7.30 p.m., 6 Blenheim Lane, Aberdeen.

REGION 14

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

REGION 17

Portsmouth (P. & D.R.S.).—June 23 (Junk Sale), June 30, July 7 ("Single Sideband"); July 14 (Members' Problems), 7.30 p.m., Scarra, 183 Albert Road, Southsea.

Southampton.—July 4, August 1, September 5, 7 p.m., Prospect House (back of Gas Show-rooms), Above Bar, Southampton.

DATES FOR YOUR DIARY

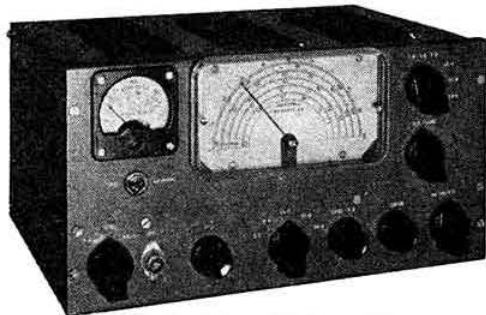
June 21.—Harlow Mobile Rally.
June 28.—Worthing "Bucket and Spade" Party.
July 5.—Amateur Radio Mobile Society Rally at Maldon, Essex.
July 19.—New Forest Mobile Rally.
August 16.—Derby Mobile Rally (Provisional).
August 16.—South Shields Mobile Rally.
August 23.—Tunbridge Wells Mobile Rally.
August 26-September 5.—National Radio Show, London.
August 30.—G6UT's Ham Party.
August 30.—South Manchester and Stockport Mobile Rally.
September 6.—London Mobile Rally.
September 12.—Glasgow O.R.M.
September 13.—Ayr O.R.M.
September 13.—Woburn Abbey Mobile Rally (Provisional).
September 20.—Lincoln Hamfest and Mobile Rally.
September 20.—Southampton O.R.M.
September 26.—Cardiff O.R.M.
October 24 or 25.—London O.R.M. (provisional date).
November 25-28.—R.S.G.B. Radio Hobbies Exhibition, London

D/F Qualifying Event

DETAILS of the Birmingham D/F Qualifying Event are as follows:

Sunday, July 12.
Organizers: G. M. and P. M. Williams, 20 George Road, Water Orton, near Birmingham.
Frequency: 1899.5 kc/s.
Call-sign: G3JBN/P.
Map: Ordnance Survey, New Popular Edition, Sheet No. 120.
Assembly Point: Apex of small triangular junction approximately 1 mile south-west of Draycott-in-the-Clay (N.G.R. SK/141273).
Assembly Time: 13.30 B.S.T.
Entries and Tea: Intending competitors should notify the organizers as soon as possible, stating the number in their party requiring tea, which will be at the Castle Hotel, Tamworth (N.G.R. SK/206039).

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The K.W. "Valiant"

A small transmitter for Mobile and Home Station use. VFO-PA. High level Plate and screen modulation. Up to 65 watts input to 6146 (use your own Power Supply). Front panel only 12" x 6".

Complete Kit 10-80 metres **£32.10.0**

Complete Kit 10-160 metres **£35.10.0**

Ready wired and tested 10-80 metres **£40.10.0**

Ready wired and tested 10-160 metres **£43.15.0**

Carriage extra on the above.

May we send you details of the "Valiant" or other equipment.

K.W. "Vanguard" 50 watt complete transmitter (Kit or Ready wired) 10-80 or 10-160; K.W. "Viscount" S.S.B. Transmitter; K.W.-Gelosso Receiver front-end Converter; Geloso G209-R Receiver for S.S.B., A.M., C.W. Latest model 10-160 metres; K.W. Low and High Pass Filters; Geloso V.F.O. Units, Pi Coils, R.f. chokes, etc.; Mosley "Trapmaster" 3 Band Beams and Vertical Aerials; Triple Quad Beam (GM3BQA) 10, 15, 20 metres; Geloso Microphones, etc.

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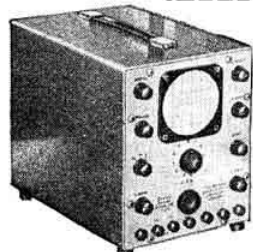
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Short wave dipole for 5 to 20 Mc/s. 33 ft. span and 60 ft. twin feeder down lead. Leaflet on request.

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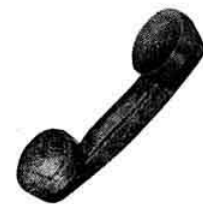
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UNIVERSAL HANDSET

Moulded in Propionate—one of the toughest plastic materials ever produced, this beautifully styled, robust and lightweight instrument is designed to accommodate any known Transmitter or Receiver Inset. Built-in



Double Pole changeover switch is also available. Standard Insets: Moving Coil, Electro-magnetic, Single Carbon and Double Button Carbon. For use on Radio Stations, Mobile Radio, Walkie-Talkie, Police Car-Radio, etc.

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500 Microamps	2 1/2 in.	MC/FR	37/6
1 Milliamp	2 in.	MC/FS	27/6
5 Milliamps	2 in.	MC/FR	17/6
30 Milliamps	2 1/2 in.	MC/FR	12/6
100 Milliamps	2 1/2 in.	MC/FR	12/6
5 Amperes D.C.	2 1/2 in.	MI/FR	17/6
5 Amperes	2 in.	MC/FS	27/6
15 Amperes	2 in.	MC/FR	19/6

MICROAMMETERS 50 F.S.D. 2 1/2 in. Proj. round. Scaled 10 Millirontgens, 45/-, Post 1/6.

MICROAMMETER 250 F.S.D. 3 1/2 in. F.R. Sangamo Mod. S.37. Scaled for valve voltmeter. Circuit available free, 55/-, Post 1/6.

HEADPHONES, Balanced armature DLR5 10/6 pr; High resistance 4000 type CHR, 12/6 pr; Balanced armature DHR, 17/6 pr, Post 1/6 each.

POLE PLUG Socket, shrouded, one hole fixing, 6 pairs, 18/-, Post 1/-.

TEST PRODS, retracting points, fused hole and terminals, 5/6. Post 6d.

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AVO TEST BRIDGES. 220/240 volt A.C. Measures capacities from 5 pf. to 50 mfd. and resistance from 5 ohms to 50 megohms. Valve voltmeter range 0.1 to 15 volts and condenser leakage test, £9/19/6. Post 3/-.

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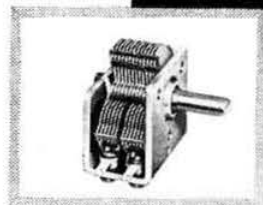
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3V4 7/6	6B8G 7/6	6L6G 12/6	8D2 4/6	12N8GT 8/6	83V 12/6	DL33 9/6	ECC99 13/6	FW4 800/-	OA71(8) 9/6	SP61 3/6	UY41 8/6
4D1 7/6	6B8G 7/6	6L6G 12/6	8D2 4/6	12N8GT 8/6	83V 12/6	DL33 9/6	ECC99 13/6	FW4 800/-	OA71(8) 9/6	SP61 3/6	UY41 8/6
5R4G 17/6	6C9 12/6	6SH7 8/-	12A8H 10/6	12N8GT 8/6	83V 12/6	DL33 9/6	ECC99 13/6	FW4 800/-	OA71(8) 9/6	SP61 3/6	UY41 8/6
5U4G 8/6	6C10 12/6	6SH7 8/-	12A8H 10/6	12N8GT 8/6	83V 12/6	DL33 9/6	ECC99 13/6	FW4 800/-	OA71(8) 9/6	SP61 3/6	UY41 8/6
5V4G 11/6	6CH6 12/6	6SH7 8/-	12A8H 10/6	12N8GT 8/6	83V 12/6	DL33 9/6	ECC99 13/6	FW4 800/-	OA71(8) 9/6	SP61 3/6	UY41 8/6
5X4G 12/6	6D6 6/6	6SH7 8/-	12A8H 10/6	12N8GT 8/6	83V 12/6	DL33 9/6	ECC99 13/6	FW4 800/-	OA71(8) 9/6	SP61 3/6	UY41 8/6
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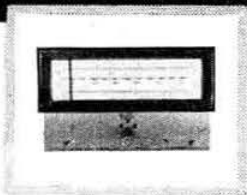
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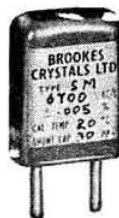


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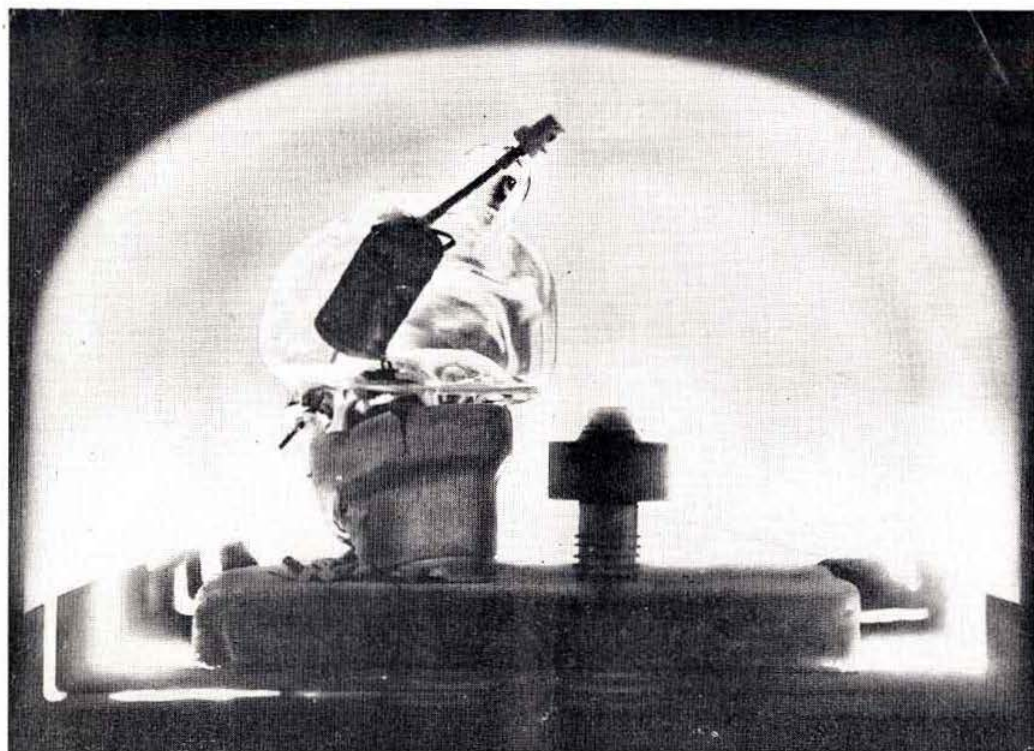
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Applications, giving full details of qualifications and experience as well as the names and addresses of two referees, should be sent to Professor A. C. B. LOVELL, Jodrell Bank Experimental Station, Lower Withington, Macclesfield, Cheshire.

INDEX TO ADVERTISERS

	Page
Airmec Limited	567
Avo Ltd.	561
Bentley Acoustic Corporation Ltd.	588
British National Radio School	591
Brookes Crystals Ltd.	589
Brown, S. G., Ltd.	587
Candler System Co.	590
Coscor Instruments Ltd.	585
Daystrom Limited	565
Eitel-McCullough Inc.	Cover iii
Electronic Tubes Limited	566
E.M.I. Sales & Service Ltd.	568
Harris, P.	590
Henry's Radio Ltd.	564
Home Radio (Mitcham) Ltd.	587
Jackson Bros. (London) Ltd.	589
Johnsons (Radio-RS)	591
K.W. Electronics Ltd.	587
Light Soldering Developments Ltd.	564
Lustraphone Ltd.	564
McMurdo Instruments Co. Ltd.	562
Minimitter Co. Ltd.	592
Mosley Electronics Ltd.	Front Cover
Oliver & Randall Ltd.	589
Pitman, Sir Isaac & Son Ltd.	584
Proops Bros. Ltd.	Cover ii
Radiostrutor	591
Radio, Television & Instrument Service	589
Short Wave (Hull) Radio	Cover iv
Smith, H. L., & Co. Ltd.	590
Southern Radio & Electrical Supplies	591
Standard Telephones & Cables Ltd.	563
Tele-Radio (1943) Ltd.	590
University of Manchester	592
Webb's Radio	562
Whitaker, H.	588
Wilkinson, L. (Croydon) Ltd.	588
Young, Chas. H., Ltd.	Cover iv
Situations Vacant	592



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