

**R·S·G·B**  
**BULLETIN**

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

**June 1946**

*The original front cover for this edition was not available.*

*The original front cover for this edition was not available.*

## AROUND



## THE DISTRICTS

### DISTRICT 1 (North Western)

D.R.: H. W. Stacey, B.E.M. (G6CX), "Sandless," Eddisbury Road, West Kirby, Cheshire. Hoyle 337. Scribe: A. B. Wright (G6FW), 106 Knowsley Road, St. Helens.

General.—The high spot last month was the BULLETIN notice about Admiralty Electronic Scrap. The D. R.'s chief concern has been to devise and operate a scheme which will give every member in the District a fair share of what is available and it is hoped that by the time these notes are published operations will be well in hand. Please contact your nearest T. R. if you require information.

Council and the General Secretary are to be congratulated upon their persistent and successful efforts to secure this very fine benefit for members. The carrying out of the distribution scheme shows the need for and advantage of organised groups throughout the District, under active T. R.'s, and the D. R. urges members who do not belong to an existing group to join and support their nearest existing group, or to form additional groups where numbers permit.

P. D. M.—G6OM has secured accommodation for the P. D. M. at Manchester on Sunday, September 29, 1946, and members are accordingly asked to keep the date open. Full details will be published in due course.

Burnley.—G2CXW and 2CUO are now on the air. 2FFO is back from the Navy and awaiting his full licence. 3IY, STD, 3VO, 2RB, 5ZN, 3WU, 2CSG, 2AYY, are active on various bands. G5ZN.

Manchester.—Eighty members attended the meeting on May 18, at the College of Technology, Manchester. G6OM and G2OI were on the platform, and G6OM was elected to the Chair. By a majority vote it was decided to form the Manchester and District Radio Society, to be affiliated to the R.S.G.B. Officers elected were: Chairman, G6OM; treasurer, G2WQ; secretary, G5CP. Committee: BRS3675, G5PX, G3YB, G2HCL, BRS11494, BRS10982.

Rochdale.—The monthly meeting was held at the home of G6QA, 82 Molyneux Street, Rochdale, Sunday, May 19. Nine members were present as well as three visitors, G6OM, 8NL and 2HCL. Future meetings will be held on the third Sunday of each month at the above address. Active members are G6AX, 3BN, 5XF and G6QA.

Southport.—Mr. R. Moffitt (G5KX) of 1 Balmoral Drive, Southport, reports that 2MJ, 2LM, 8DQ, 8CJ, 6YR, 5KX, 4CF, 6SX and 2DQX are all active, and that 5ZL, 2XU, 2IN and 8QG will shortly be on the air.

West Cumberland.—An enjoyable meeting was held at 8RZ, on May 19, those present including GWR, 8DP, 8RZ, 3BW, 3SY, 4NS, 4PZ, 2HHB, 2DWG, 2AUM and BRS1711. The topic under discussion was what constitutes T9 on 1.8. As this was the T. R.'s last "Bachelor's party," the members present made many 100% QSO's with new bottles, which seemed to come from all angles! 3BW would like to thank all present for their good wishes.

Liverpool and Merseyside.—A local committee to handle the purchase of Admiralty scrap has been formed, consisting of Messrs. Alder, Sanderson, and the D. R., Mr. Stacey. Further announcements will be made at the meetings to be held in June. The local Short-wave Club has challenged the section to a Quiz contest. This has been accepted and the date of the contest will be circulated to all interested members.

Ashton under Lyne and District.—The May meeting took the form of a 60 Mc/s receiving Field Day, at Glossop, Derbyshire. Several co-operating stations were received at good strength, including G6TL, 3BY, 3PD and 2WQ. Welcome refreshments were provided by G3PY. The next meeting is to be held on June 24, when the Field Day and the recent Radio Amateurs' exam. will be the main items for discussion.

### DISTRICT 2 (North Eastern)

D.R.: C. A. Sharpe (G6KU), 56 Moore Avenue, Wibsey, Bradford. Bfd. 10772. Scribe: H. Beadle (G8UO), 13 Chandos Street, Keighley, Yorks.

Bradford.—At the meeting held on May 13th at Cambridge House, two 1151 receivers were demonstrated. The Bradford Short Wave Club recently held a successful auction of surplus gear. G3HA is now demobbed.

Barnsley.—G2BRFJ has received his licence and is active on 1.8. SPK is welcomed back and it is hoped to see him at the Barnsley Club meetings which are taking place fortnightly from June 21st.

Doncaster.—The Doncaster Radio Society has now restarted with a membership of 24. Particulars can be obtained from the Hon. Sec. Mr. H. Flintham, BRS193, 50 Burton Avenue, Doncaster. 8BA would like to hear from GSH. 4DP has rejoined the R.A.F. with the same rank of W/O.

Sheffield.—Monthly meetings continue to meet with success. G2MF, 3FN and 5TO are active on 1.8.

Morley.—G5YV has worked 25 countries on 28 Mc/s. Keighley.—G2CPF is using a 264ft. voltage-fed aerial and

contacts are desired for comparison tests. All reports will be acknowledged. The return of parts of the other bands is noted with pleasure since this will mean less pressure on 1.8!

Huddersfield.—The meeting at 5VD was attended by 3CD, 8VF, 8VK, 3VP, 2AND, 2BMC, 2DUX, 6201, 6807, 6863, 11363 and two visitors. It was decided to get together again next month. Meet on Ritz car-park at 7.30 p.m., June 19th.

G8UO.

### DISTRICT 3 (West Midlands)

D.R.: V. M. Desmond (G5VM), 92 Worcester Street, Birmingham, 5. Scribe: E. J. Wilson (G2FDR), 48 Westbourne Road, Olton, Birmingham.

Birmingham.—At the meeting of M.A.R.S., held on May 21, 65 members and visitors were present. G5BJ, G2AK and G2BKZ discussed 56 Mc/s. gear, some fine examples of which were on show. A new Society has been formed in West Bromwich—those interested should contact Mr. G. Johnson, 22 Linton Avenue, Hatley Heath.

Cocentry.—Mr. G. Brown, G5BJ, recently gave a lecture to the members of C.A.R.S. on Police Radio Communications. It is hoped in the near future to arrange a visit to the G.E.C. tele-communication Works.

Wolverhampton.—A new Radio Society has been formed in the town and all R.S.G.B. members are welcomed. The secretary is Mr. W. O. Sturmer, G8KL, 3 Broome Road.

General.—G2FLG of Cannock would like to hear from more local members. BRS4806, 10601, 11126 of Kidderminster hope to be active shortly.

BRS6446, writing from India, states that amateur transmitting is still prohibited in that country. He hopes to be active in Bilston on his return.

BRS11298, now demobbed, and living in Stoke-on-Trent, would be pleased to contact any local member.

G2FDR.

### DISTRICT 4 (East Midlands)

D.R.: L. Ridgeway, (G2RI) 90, Romney Road, Leicester. Phone 24295.

Mansfield.—The May meeting was brought forward to the 26th in view of the P.D.M. on June 2, and 17 members were present. BRSJ now has a G in front and the following are in the Services: BRS5462, 10,746 (India), 11,647 (Singapore) and 12,096. Next meeting Swan Hotel, July 7, at 3 p.m.

Derby.—At a recent junk sale, G2OU practically went QRT owing to the efforts of G2CVV. Members are hoping that pressure will be brought to bear for the retention of the 1.8 band. Future meetings will be held at 246 St. Thomas Road, Derby, on Sundays June 23, July 7 and 21, at 11 a.m. Please bring items of gear for examination and discussion.

Nottingham.—The visit to R.B.C. Daventry proved very interesting and thanks are due to G2BSR for the organisation. The party saw the old 5XX and 5GB and were able to compare them with the up-to-date transmitters. With reference to the crystal register recently mentioned in the notes, the T.R. would be glad to have information from members. We are sorry to hear that BRS11459 who operates our local monitor station is ill. Speedy Recovery, O.M.

Northampton.—The acting T.R. has heard from G5LP, 3BA and BRS6124. G3BA is very active at Daventry and is willing to run Morse classes. Will intending pupils contact the T.R. at 65 Colwyn Road, Northampton.

Leicester.—Most members are active on 1.8 and multiple QSOs are the order of the day to reduce interference. 2FNW has taken his Morse test and will shortly be operational. Ex-ZC6AA is now in the District and hopes to get on the air soon. G6UX made history by putting a first-class signal on the air using a transmitter constructed by his XYL. Meetings are still held on the third Sunday each month at 27 Belvoir Street. Time, 2.30 p.m.

G2RI.

### DISTRICT 5 (Western)

D.R.: R. A. Bartlett (G6RB), 31 King's Drive, Bishopston, Bristol. Bristol 46960.

Bristol.—Eight new members were welcomed among a total attendance of 36 at the last Bristol meeting when 5KT reported that five BRS members attended the first instructional meeting held at his home. Electronic scrap provided the main topic for discussion. A visit is proposed to the Radio Dept. of Bristol University on June 21; those interested should contact Mr. R. M. Sharp. Phone Bristol 25963.

Swindon.—There was a large attendance at the meeting held on May 12 when 3HS spoke on the value of BRS reports to transmitters. A quick sale of crystals followed. 5RP and 6LO are listening on 58 and have made skeds with 5TP of Henley. At the meeting on May 25 a junk sale was conducted by 3HS. 3825 was a welcome visitor. 2HN, 3HC, 3HS, 3JO, 4AP, 6NW, 6ZH and 2BUJ are active on 1.8. 5RP and 6ZH have worked OK1AA on

that band. Several local members have taken the examination for full licences.

**Moreton in the Marsh.**—G2FZO is still not getting out on 28, but VU2AL stationed nearby is giving him a helping hand.

**Chippenhams.**—3825 would like to meet other amateurs in that locality. G6RB.

### DISTRICT 6 (South Western)

**D.R.:** W. B. Sydenham, B.Sc. (G5SY), Sherrington, Cleveland Road, Torquay. Torquay 2097.

**Penance and Falmouth.**—Two meetings were held in May. At the first, in Penance, there was an attendance of twelve, including G2DDR, 2DFH, 2FQD, 2JL, (T.R.), 2WW, 4IV, 8AW, SPG, and BR10083. At the second meeting, held in Falmouth, G2BHW, 2DDR, 2DFH, 2FQD, 2JL, 2WW, 4IV, 8AW and BR10498 were present. G2DDR welcomed the visitors to Falmouth and expressed the hope that there would now be frequent meetings in both towns. He demonstrated his 1154B transmitter, and a Voigt loudspeaker working with a normal receiver. Meetings at Falmouth will be held on the third Thursday in each month. Those at Penance are on the first Thursday.

**Taunton.**—At the meeting on May 20 G2JM, 2DRW, 5AK, 6LY, BR10130, 10253 and 11478 were present. The two new members 10253 and 11478 were welcomed. 2DRW offered to assist those in need of Morse practice.

**Exeter.**—The T.R., G5QA, wishes to stress the fact that meetings are held at the Y.M.C.A., Exeter, on the third Wednesday of each month, at 6.30 p.m. for 7 o'clock.

At the last meeting he gave a talk on "Snags I have licked in the 10 metre P.A. Stage." G3SN followed with a talk on 5 Metre superhets. At the next meeting G3MU will give a lecture on modulators.

### DISTRICT 7 (Southern)

**D.R.:** W. E. Russell (G5WP), "Milestones," Mayford, Woking, Surrey. Woking 1589.

Details of the P.D.M. at Southsea will be found elsewhere in this issue. An excellent programme has been arranged and in addition to the promised attendance of members of Council and the General Secretary we are to have the pleasure of welcoming "Dud" Charman, G6CJ, and to hear and see his outstanding demonstration of all our favourite aerials at work. This latter item is, on its own merits, worth travelling a hundred miles to see, so let's have a record attendance! Reservations before July 6 please.

Apologies to all T.R.s for the fact that this month the D.R. has taken the District's ration of BULLETIN space! Apologies also to those who wrote to the D.R. about the Naval Surplus and didn't get a reply. Over 80 inquiries, by telephone and letter, were received in the first 11 days, after the announcement in the BULL. Details of meetings throughout the District will be found under "Forthcoming Events." G5WP.

### DISTRICT 8 (Home Counties)

**D.R.:** S. J. Granfield (G5BQ), 47, Warren Road, Cambridge. Tel: Cambridge 54644.

Every member in this District should have a copy of the rules for the District 8 Trophy Competition. Your five best QSL cards may win the cup for you this year. A stamped envelope will bring full particulars from the D.R.

A District Meeting was held at the "Jolly Waterman," Cambridge, on May 24, when there was a good attendance. Items from the station of the late G8ST were offered for sale by G5DR, and some articles were sold and re-sold. There was a further demonstration of ham generosity at the end when a whip round brought the proceeds up to a nice round figure.

**Cambridge.**—The air is singularly quiet these days. Rumour has it that big preparations are in hand... atomic signal shifters probably.

**Wisbech.**—Mr. A. Swann, BR87780, is anxious to contact local members with the idea of arranging a meeting shortly. His QRA is 11 St. Peter's Road.

**Peterborough.**—BR11,044, at present in Burma, hopes to be home for good by August. Whilst on leave G2NJ had several QSO's on 1-8 including a four-way with 5BQ, 2DT, and 2UQ. 5NP and 3DY are busy on constructional work.

**Ely.**—BR12,366 is in hospital here. Speedy recovery O.M.

**Royton.**—BR8883 writes regularly from Sharjah, Iraq. Listen for the locals on 14 O.M. and let us have a report please.

**St. Ives.**—G5RL is putting the finishing touches to a new rack and panel transmitter.

**Woburn Sands.**—G4QK is now up at Oxford, but hopes to get on the air in July. He would like to meet G2DU who is believed to be in the area.

A Social Evening is proposed for June 21 or 28. Details will have been announced at the meeting on June 14, but anyone who missed this meeting should contact the D.R. for particulars. G5BQ.

### DISTRICT 9 (East Anglia)

**D.R.:** H. W. Sadler (G2XS), The Warren Farm, South Wootton, King's Lynn, Norfolk. Castle Rising 233.

The first District 9 P.D.M. ever held in Norwich took place on May 5 when some 40 members attended. Lunch was followed by a very instructive talk on the work of the Society by Mr. S. K. Lewer (6LJ) followed by contributions from 6LL, SKZ and 8TL, the other Council Members present. A hearty vote of thanks was recorded to them for coming along to see us. Other welcome

visitors from afar included 6LB of Chelmsford, 2UQ and son from Peterborough, and 5IX of London. Informal discussions followed tea and a group photograph was taken by 8JO, postcard copies of which can be obtained from him at 6 Ivy Gates, Norwich Road, Wymondham, price 1s. plus postage. The D.R. would like to take this opportunity of thanking the Norwich T.R. G2MN, for all that he did to help make the day so enjoyable.

**Farmouth.**—The T.R. whose new address is 45 Blake Road, reports that BR3469 is expected out soon and that D2DP will shortly be back with his old call. The T.R. wants a shack for his gear, can anyone oblige?

**King's Lynn.**—A warm welcome is extended to Mr. Ashford, 2AOG, of Dorset, who has become a resident here, thus bringing up the number of active full calls in the town to six. The rest of District 9 still seems very difficult to find on 1-8. G2XS.

### DISTRICT 10 (South Wales & Monmouthshire)

**D.R.:** H. H. Phillips (GW4KQ), 80 Cottrell Road, Roath Park, Cardiff. (Cardiff 4700 during business hours.)

Just before this issue closed for Press news was received at Headquarters that the D.R. (Mr. Hugh Phillips, GW4KQ) had been taken seriously ill. We feel sure that all members in District 10 will appreciate that under the circumstances no notes can be published this month. For the time being Mr. Alan Dyer, GW8UH, 20 Ladysmith Road, Penylan, Cardiff, will act as Deputy D.R. Members who have written to GW4KQ and have received no reply should communicate with Mr. Dyer. G6CL.

### DISTRICT 11 (North Wales)

**D.R.:** F. J. E. Starkey (GW6KY), "Endon," Gronant Road, Prestatyn, North Wales. Scribe: C. Spillane (BR1060), 14 Queensway, Prestatyn.

**Prestatyn.**—The following attended the meeting held on May 26. G5YP, GW6KY, 5FU, 4CK, 3CF, 3JI, 2DAH, 2NIY, 1060, 2731, 6823, 11062, 12298 and ex-2CRF. Discussions centred mainly around the proposed purchase of some of the ex-Admiralty gear. The next meeting will be on Sunday, June 23, at the Savoy Cafe, at 3 p.m. BR55837 is now home from the M.E. on Class B demob. 3CF is active on 1901.5 kc/s. 4CK has his rig working at last and 2HLY has just received his full licence. 4CK is spending many happy hours with G3IF (ex-VEE4MV) in Aylesbury. 5FU is building a new rig for 60.

**Llandudno.**—GW3JI is active on 1-8 and 2CRF is rebuilding. They gather at 3JI's every Thursday evening and would be happy if other locals would join them.

**Caernarfon.**—Bangor.—Mr. R. Thomas, BR89017, Goleufryn Cwn-y-Glo, Caernarfon, has offered his services as T.R. for this area. Will local members please contact him?

GW2FUD writing from Suez says he hopes to be on the air as soon as he gets home.

**Caernarvon.**—F./Lt. Brown, ex-VU2AL, announces the arrival of a second junior op. (Congrats OM). During Easter leave he was busy running a 28 Mc/s receiver to all the high spots in the district. BR1060.

### DISTRICT 12 (London North and Herts)

**Deputy D.R.:** S. Howard (G8TY), 92 Arlington Road, Southgate, N.14. (Enterprise 3219). Scribe: C. R. Stevens (BR3009), 22 Bramford Court, High Street, Southgate, N.14. (Palmer's Green 0548.)

Due to the continued indisposition of the D.R., Mr. S. A. Howard, G8TY, has been appointed Deputy D.R. for North London and Herts.

**North London.**—At the May meeting held at Merryhills Hotel, Enfield West, representatives of Tele-Radio were present to discuss the latest products of their company. Especial interest was



Bristol P.D.M. April 14, 1946  
Front row: G2BAR, 5KJ, 6RB, 6CL, 8KZ, 8TL

attached to a talk given by Mr. Kassia (Chief Engineer) on the construction of miniature transmitters and receivers.

An informative discussion on 28 Mc/s harmonics was initiated by G5ZJ. Acting on the suggestion of G6WU, 11 transmitting stations in the District agreed to radiate signals on 28 Mc/s on a pre-arranged schedule whilst a number of other members possessing 56 Mc/s receivers agreed to check for harmonic radiation. BRS3386 offered to co-relate the reports which were due to be discussed at the June meeting.

During the evening G6CL (who presided) spoke about the opening of the DX bands, the QSL Bureau, and the new scheme of Regional representation. An attendance of nearly 50 was recorded at this meeting.

G8KW/D2KW recently on leave from Hamburg sends 73 to old friends. Congrats to Cecil Beardow, BRS10,405, who has been awarded the B.E.M. Letters have been received from F./Lt. R. D. McMillan (Singapore) and L./Cpl. G. S. Squires (India).

BRS3009.

**Enfield.**—Fifteen members were present at the April meeting when a talk by G5VY on aerial systems was followed by discussions on essential instruments for the shack and their uses.

Considering weather conditions the May meeting was well attended. Discussions, well sponsored by G8SK, centred around U.H.F. converters and superhet receivers.

Members are reminded that this Group meets on the third Sunday of each month at 3 p.m. The June meeting will take the form of an open discussion on U.H.F. transmitters. G5VY

**St. Albans.**—There was an attendance of 19 at the May meeting to hear a description of the inner workings of the Klystron by BRS11,959 and we thank him for the trouble he took in preparing his paper and the diagrams. Congrats to G2FBG on passing his Morse test. Slow Morse transmissions from G5UM have been well received and reports have come in from as far away as Norfolk.

BRS3412.

### DISTRICT 13 (London South)

**D.R.:** S. E. Langley (G3ST), 52, Dumbarton Road, S.W.2. Scribe: W. D. Gilmour (G2VB), 35, Grangecliffe Gardens, South Norwood, S.E.25.

The first post-war meeting at Brotherhood Hall, West Norwood, was supported by about 40 members.

The May meetings at G4DC (South Eastern) and G4CG (South Western) again went with a swing. As three meetings are now held every month in District 13 this should allow all South London members to get together.

G3ST, 3DF, 2DP, and BRS4324 visited the Naval Depot at Portsmouth hoping to bring back some useful scrap, but returned empty. G2GZ is now back home and believe it or not he has acquired an XXL. The date of the July meeting will be announced over the air by the wise men of the South.

G3ST.

### DISTRICT 14 (Eastern)

**D.R.:** L. J. Fuller (G6LB), Meadow Brook, Vicarage Lane, Great Baddow, Chelmsford, Essex. Tel.: Gt. Baddow 224.

**Chelmsford.**—Chief activity is on 1.8. G2KG and 2OR are busy on phone, and 6LB on C.W. has been reported RST349 in Tunis. Meetings are being better attended. G2AAU is busy on 28.

**Chingford.**—At the meeting held at G3YF several new members were welcomed. The "silent phone night" was fully discussed and it was decided to continue it for a while.

**Grays.**—Baird's Cafe, Orsett Road, is now Grays H.Q. 2BOU has his G up. A.D.F. Test is soon to be held.

**Southend.**—The meeting at G2KH drew an attendance of 17, the July P.D.M. and "top band" operating being the chief items for discussion. Activity is low at present, most members being busy getting ready for 7 and 14. It is hoped to form a local 58 Mc/s. network.

G6LB.

### DISTRICT 15 (London West, Middlesex and Buckinghamshire)

**D.R.:** H. V. Wilkins (G6W.N), 539, Oldfield Lane, Sudbury Hill, Greenford, Middlesex, Byron 3369. Scribe: E. Holt, 36 Bulstrode Road, Hounslow, Middlesex.

The Post War Planning Committee is now getting into its stride and the nine point Plan as outlined in the March, 1945 BULLETIN is being put into operation. Great efforts are being made to gain the interest of the BRS membership and a scheme of co-operation between transmitting and receiving stations has been formulated and is being started immediately. Offers are requested from BRS members to act as "District 15 Receiving Stations" in different categories according to the equipment and inclination of the member concerned. The categories are: C. W. quality checking; phone quality checking; DX listening and VHF listening. T.R.'s have full details and are bringing the scheme up for discussion at their town meetings. Suggestions for future activity are very welcome and should be passed to the T.R.s for attention. Don't feel that as a BRS Member you are being left out of the picture, contact your T.R. and join in local activities.

**Hounslow.**—The inaugural meeting of the Hounslow and District Radio Society was held on May 8, with some 21 members in attendance. The Constitution and Rules of the Society were read and unanimously accepted, after which individual members put forward their pet interest in radio. These 14 several interests were then voted upon for the order in which they should be dealt

with by the Society. The first, "Short Wave Receivers," receiving 13 votes was the subject of a talk by Mr. A. Pottle on May 22, when many members brought along their receivers for exhibition, criticism and advice. Six new members were also enrolled.

**Twickenham.**—Welcome to our first lady member, Miss Stratton BRS11849. The next meeting is important as the P.W.P. Committee's proposals have to be discussed. At the meeting held on May 5, G2VV brought along an R.A.F. transmitter of the type now being sold as "surplus goods" and caused an interesting discussion as to the likelihood of getting value for money.

### DISTRICT 16 (South Eastern)

**D.R.:** W. H. Allen, M.B.E. (G2UJ), 32, Earls Road, Tunbridge Wells, Kent. Scribe: E. H. Tronell (G2HKU), 27, Unity Street, Sheerness, Isle of Sheppey, Kent.

**General.**—A meeting is to be held at G8CP, The Rectory, Newhaven, on Saturday, July 6, at 3.30 p.m. The D.R. hopes to attend and to meet many South Coast members. Tea will be provided at a cost of 1s. 6d. Please advise SCP by postcard if you are coming.

There have been heavy demands by members for letters of authority to purchase Admiralty Scrap. In common with other Districts three such letters have been allotted, and will be distributed in strict rotation. You may have to wait some time but it will come in the end! Would members please enclose return postage when requiring a reply from the D.R. on this or other matters.

**Beckenham and Bromley.**—The next meeting of the local society is on July 5 at the Eden Park Hotel. Activity is increasing now that the bands are to be re-opened. G2AVI, 18 Upper Park Road (Ray. 2071), has been appointed A.T.R.

**Chislehurst.**—Cpl. Vickery (R.A.F.) is now operating as VS2BA in Kuala Lumpur, Malaya, and mentions that another member is operating VS2BB. He would like to hear from old friends.

**Bexley, Bexley Heath, Crayford, Dartford and Erith.**—G4CW, 6 Lower Station Road, Crayford, has been appointed A.T.R. for this area. 3LI and 3UT are active on 28.

**Chatham and Gillingham.**—The M.A.T.S. have a new club room at 207 Luton Road, and the programme for the coming season is ready. 2IG gave a lecture on oscilloscopes recently which was much appreciated. New BRS members will be welcome at club meetings.

**Maidstone.**—4HG is active on the "top band" using a Franklin V.F.O. 8UC is on 28 daily and is building a ten valve superhet. 10,997 has completed his superhet and 9445 is building a six-inch oscillograph. 9597 has built a superhet car radio using a rotary converter. 7387 has a television receiver working and has been appointed A.T.R. His address is Ashmore, Ashford Road (Bearsted 6118).

**Sittingbourne.**—2CSH demobbed from the R.A.F., expects to be operating soon.

**Sheppey.**—2VA has been listening for G calls in Ceylon and hopes to get a VST call soon. 2HKU is rebuilding for D.C. mains operation. 2DCG has a new rig ready to go on the air.

**Canterbury.**—G2JN is operating an SP2 from batteries on 1.8 and is planning a 7 and 14 transmitter.

**Ramsgate.**—S. G. Abbott, 3JU, has been demobbed from the R.A.F. He used to operate as LI3JU near Tripoli and will answer all QSL cards received (BRS reports should enclose S.A.E.). His present address is 3 Dundonald Road.

**Hailsham.**—G2FTS is operating from London but hopes to return soon. He has a new eleven valve superhet in operation.

**East Grinstead.**—2HNV is awaiting his Morse test. 2FTP is now licenced.

**Tunbridge Wells and Tonbridge.**—Accommodation has now been found for a P.D.M. in Tunbridge Wells on September 1. Further details will be given later. 2UJ, 4IB, 5IP, 5KV and 5OQ are active.

### DISTRICT 17 (Mid East)

**D.R.:** A. C. Simons (G5BD), "The Elms," Church Road, Mablethorpe. Phone 69.

**Boston.**—G6GH recently arranged a meeting which was attended by the active locals, including G8BQ, 6LH, 2BQC, 4KZ, 2BUV is now working in Belgium.

**Sleaford.**—G6TV finds a "course" delaying his rebuilding. 8RW is on 1.8 and 58. 4315 now demobbed and acting as T.R. spent a pleasant evening at R.A.F.A.R.T.S.

**Gainsborough.**—G5FP has been posted to Cairo. 4OF uses two watts on 1.8. 400 is demobbed. 30S is on 28.

**Grimby.**—G4GX, 4GZ, 2VY, 8KH, 8FN, 2HOJ, 2AJB are on 1.8. 5LL and 5BD on 59 Mc., no contacts yet but they have heard 11AY and some unidentified 1's also G6VX and G2AK.

Mr. Jarvis, 190 Harrowby Road, Grantham, would like to get in touch with local members with a view to forming a Radio Club.

G5BD.

### DISTRICT 18 (East Yorkshire)

**D.R.:** A. G. Dunn (G3PL), 79 Hayton Grove, Hull.

**Hull.**—An attendance of 28 was recorded at the May meeting when a lively debate took place on the question "Is Phone really Necessary?". The meeting decided by a small majority that it was necessary. Future plans include a library and a complete elementary radio course to be given on Friday evenings commencing June 21, by a member who served in H.M. Forces as



an Instructor. Friday evenings will also be available for general discussion. The club-room will be open on one other evening each week for meetings of groups of members interested in particular subjects such as 60, aerials, etc. The full monthly meetings will also be held at the club-room, 30 Princes Avenue, commencing on June 17.

Congrats to G2CGL and Mrs. Grafton on the arrival of a junior op. G2QO recently worked XABL in Greece; this is BR53308 of Hull who sends his 73 to all. 4LH has been active on 1.8 using an Avo Oscillator with an input of 1 watt. He has worked several stations. One member is rumoured to be thinking of using two Avomors in push-pull for five metres! G2XA.

York.—Mr. G. W. Kelley (G5KC), 146 Melrosegate, Hull Rd., York, is the new Acting T.R. Will all members in York please contact him? BR511543 has taken the Radio Amateurs' Exam. and is awaiting the result.

General.—No one has yet volunteered as A.T.R. for Bridlington or Scarborough.

### DISTRICT 19 (Northern)

D.R.: R. J. Bradley (G2FO), 36 Raby Road, Stockton-on-Tees, Co. Durham.

West Hartlepool.—Activity is increasing and the local Society is now 18 strong. Morse classes are held regularly and lectures have been given during the past few weeks by Mr. Elliott on "Radar," and by Mr. Carter on "Ships' Radio Apparatus." BR55159 has also given a demonstration of his 1155 receiver. It is hoped that in the near future it will be possible to start classes for those about to take the City and Guilds Examination for a full licence.

3LS, 3TQ and 3TO are rebuilding their transmitters while other members are constructing test-ear. BR56469.

Sunderland.—A meeting of local members will be held at 16 North Bridge Street (opposite Monkwearmouth Station), Sunderland, on June 25 at 7.30 p.m. All members residing in the town are requested to give their full support. G2TG.

Darlington.—BR59504 is desirous of starting local meetings, and requests those interested to get in touch with him at 50 Alwyn Road, Darlington.

General.—What's happened to the Catterick members recently? T.R.'s are required for Middlesbrough, Darlington and Catterick, will anybody oblige?

If you don't get the letter authorising the purchase of electronic scrap for a long time yet, don't blame the D.R. You were asked to form purchasing groups and only three such groups have been formed. They were given the letters first. Over 30 individuals have applied for the letters so far, and as the dump can only be visited on Mondays, it's going to take a long time to circulate them to everybody at the rate of three a week! G2FO.

### Scotland

Scottish Records Officer: J. Hunter (GM6ZF), 51 Camphill Avenue, Langside, Glasgow, S.1. Langside 237.

"A" Area (Glasgow and surrounding counties).

A.R.: D. R. Macdonald (GM6MD), 154 Kingsacre Road, Glasgow, S.4

It is hoped that by the time these lines appear in print full arrangements for handling the Admiralty electronic scrap will be complete. Members who were not at the May meeting and are interested should apply to GM6MD or GM6ZF for particulars.

"B" Area (Aberdeen and North of Scotland).

A.R.: A. G. Anderson, B.Sc., (BR55857) 87 Brunmar Place, Aberdeen.

At the meeting held on April 29, the following members were present: GM2QX, 3SF, 3YV, 5JK, 6LG, 6VO, BR55637, 5857, 7583, 10902 and 11264. 20X who is welcomed back to the fold has announced his interest in test gear. 3SF is liable to be called the travelling salesman of "B" Area.

"C" Area (Dundee, Forfar, Perthshire, etc.).

A.R. Jas. Gouck (GM3NH), 4 School Drive, Downfield, Dundee.

Twelve members attended the May meeting in the Y.M.C.A., Dundee. Much doubt was entertained regarding the use of 10 watts on 1.8 by some 'phone stations. This band should be used for C. W. only, as high power is not needed. Next meeting is June 19, Room 7, Y.M.C.A., Dundee, at 7.30 p.m. Future meetings will be held on the third Wednesday of each month in the Y.M.C.A., Dundee, at 7.30 p.m.

"D" Area (Edinburgh and Midlothian, etc.).

A.R.: J. Wilson, C. A. (GM6XT), 52 Macdonnell Road, Newington, Edinburgh, 9. Edinburgh 42153.

The recent open night was a great success. More members are now being demobbed and it is hoped that they will come to the next meeting. GM6SR is the only station active on 58—can he get co-operation from others? Congrats to GM2CFU on his full licence. GM6U will give the lecture on June 27. His workmanship is of the highest order and he will pass on hints and kinks with demonstrations so don't miss it. Many local stations are active on 1.8.

"E" Area (Ayr and South West Scotland).

A.R.: D. A. MacQueen (GM4PW), 3 Ayr Road, Prestwick, Prestwick 78375. Scribe: Miss J. A. C. Rainie (BR57988), 6 Montgomerie Terrace, Ayr. Ayr 2375.

Ten enthusiasts recently met in Ayr and agreed to carry on. Mr. A. D. MacQueen (GM4PW) was elected A. R. and Miss J. A. C. Rainie (BR57988) Scribe. 2UU agreed to act as T. R. for Stranraer. He is active on 28 and 58 and is trying to arrange a sked with GI on 58. Congrats to 2FKV on obtaining his full licence. GM6RV is building an amplifier. 6140, who has agreed to act as T. R. for Troon, is experimenting with a signal tracer

and is giving Morse practices for members. 8538 is busy with an oscilloscope. Future meetings will be held on the second Wednesday of each month.

"F" Area (Stirlingshire, etc.).

A.R.: C. M. Winton (GM6XW), The Point, Stenhousemuir, Larbert.

There was a good attendance at the meeting on May 23 in the Plough Hotel, Stenhousemuir, when the main subject of discussion was electronic scrap. The next meeting will be held in the same place on June 27 at 7.30 p.m. New calls are: T. Sagar, GM5PV and J. Cairns, GM2FOB. The sked between 6XW and VU2WP has been suspended due to licence trouble in India.

"G" Area (Borders).

A.R.: J. P. Blair (GM5FT), 35 Market Place, Selkirk.

Thanks are recorded to 8NW for his talk on Oscillators which was much appreciated at the last meeting. Activity on 1.8 is confined to G2YY who would like reports from inland or West. BRS reports welcomed. GM8NW, 3ZH and 5FT are active on 28 when the band behaves. The next meeting will be June 23, at 2.45 p.m., at GM2IA, Mount St. Michael, Duns, Berwickshire.

"H" Area (Fife, etc.).

A.R.: W. N. Craig (GM6JJ), 18 Kirtan Road, Burntisland, Fife.

It is with regret that we announce the resignation for business reasons of Mr. A. W. Lawson, GM2NQ, as Area Representative. "H" Area is a tribute to his unceasing efforts during the last ten years. Thanks O. M. and best of luck. At an Extraordinary General Meeting held on May 15, Mr. W. N. Craig, GM6JJ, was elected A.R.

It is hoped that next month it will be possible to announce considerable activity on 60 Mc/s. Several stations are in the race for the first GM/G QSO on this band. GM3SW (Dunfermline) is active on 28 using the 7th harmonic of a 4 Mc/s. crystal in a 6L6 regenerative oscillator to drive a pair of 807's to 70 watts. Aerial is a WSJK rotary beam. GM6JJ.

### Northern Ireland

D.R.: J. N. Smith (GI5QX), 19 Hawthornden Drive, Belmont, Belfast, N.I. Phone 63323.

Members are asked to note that the phone number given above is that of the D.R.'s private address, and should not be used between 9.45 a.m. and 6.30 p.m.

Letters accompanied with a stamped addressed envelope will always receive prompt attention.

GI5QX takes this opportunity of thanking all those who helped to make the P.D.M. so successful. Many letters of appreciation have been received, and it is good to know that the event was so much enjoyed.

P.D.M. photographs can be obtained through Mr. F. Robb, GI6TK, 60 Victoria Avenue, Sydenham, Belfast. The price is 3s. 3d. post paid.

Please send items for inclusion in District Notes to the T.R. at the address given in the May BULLETIN. GI5QX.

### Channel Islands

Jersey seems to be far more active at present than the sister island of Guernsey. GC2FMV the latest addition to the locals can be heard on 1.8. 4LI, 3GS and 8NO are active, with 2CNC on 28 occasionally.

The writer had a visit from GC8MF of Guernsey, and from the conversation, that island seems dead to radio. If interest increases it is hoped to hold an inter-island Field Day for receiving.

G2ZC and G8JC are visiting Jersey in June. The latter is to enter into holy wedlock and then return to G.

Jersey listeners are holding a Field Day in August or September. Full details later. GC2CNC.

### London Meeting

Nearly 200 members were present at the meeting held on May 31, 1946 at the Institution of Electrical Engineers when Mr. H. A. M. Clark, B.Sc. (Eng.) G6OT, lectured on "Centimetric Radar for Precision Gun Laying." Sustained applause followed a vote of thanks to the lecturer proposed by Mr. A. O. Milne, G2ML.

Mr. Clark's paper will be published in an early issue of this Journal.

Prior to the lecturer the President (Mr. E. L. Gardiner, G6GR) presented a Past-President's badge to Mr. H. Bevan Swift, G2TI. Mr. Gardiner reminded the meeting that Mr. Swift was Chairman of the old T. & R. Section at the time the BULLETIN was first published 21 years ago.

### Burton-on-Trent Radio Society

A radio society has now been formed in Burton-on-Trent. Full details may be obtained from Mr. R. C. Harrison, G2RH, 1 Springfield Villas, Woods Lane, Stapenhill, Burton-on-Trent.

### Hounslow & District Radio Society

Meetings of this new Society are held on the 2nd and 4th Wednesdays in each month at Grove Road School, Cranwell Road, Hounslow. The Hon. Secretary is A. H. Pottle, 11 Abinger Gardens, Isleworth, Middlesex.

# NEW MEMBERS

THE COUNCIL HAS PLEASURE IN ANNOUNCING THAT THE FOLLOWING HAVE BEEN ELECTED TO CORPORATE MEMBERSHIP OF THE SOCIETY

## British Isles (Licenced Amateurs)

- G2DY \*F. H. HAYNES, Haynes Radio Ltd., Queensway, Enfield, Middx.  
 G2GR D. R. HOLROYD, 52 Burlington Rd., Coventry, Warks.  
 G2JI G. M. KEYWORTH, The Anglers Rest, Bamford, Near Sheffield.  
 G2KG \*A. G. HILL, Manton, 61 Third Avenue, Chelmsford, Essex.  
 G2NP F. A. PRIDE, 19A Webster Gardens, Ealing, London, W.5.  
 G2PQ \*K. A. G. COOK, 163 Dollis Hill Lane, London, N.W.2.  
 G2WU \*W. K. WHITEOAK, 146 Gisburn Road, Barnoldswick, via Colne, Lancs.  
 G2YV D. M. WHITEHOUSE, Hilderstone, Church Street, Cannock, Staffs.  
 G2ZA L. DAVIES, 52 Colebourne Road, Kings Heath, Birmingham, 14.  
 G2ZI R. C. SIMMONDS, 164 Footscray Road, Eltham, London, S.E.9.  
 G3AT \*J. H. AYRE, 11 Atwood Rd., Didsbury, Manchester, 20.  
 G3IF T. J. DEBOED, 2 Villiers Buildings, Buckingham St., Aylesbury, Bucks.  
 G3MP D. J. G. LEGGE, Westbury, Trentdale Road, Carlton, Nottingham.  
 GM3PB \*A. HERRING, 44 Banner Road, Glasgow, W.3.  
 G3PS \*W. MCCANN, 39 Somerhill Avenue, Sidecup, Kent.  
 G3RL \*D. J. SHAW, 46 St. Swithin Street, Aberdeen.  
 G3UD V. J. BLOOR, 26 Leveson Road, Hanford, Stoke-on-Trent, Staffs.  
 G3XP \*F. C. WHITE, Chester House Hotel, Chine Crescent, Bournemouth West.  
 GW3XW \*B. POWELL, 16 Islwyn Road, Mayhill, Swansea, Glam.  
 G3YG \*F. C. TATE, 4/130 Queens Drive, Finsbury Park, London, N.4.  
 G3ZA J. R. BURTON, Swan Street, Seagrave, Near Loughborough, Leics.  
 G4GL A. R. JONES, "Beverly," Neath Road, Tonna, Neath, Glam.  
 G4IQ L. E. TUCKER, 68 Borrowdale Ave., Harrow, Middx.  
 G4JF C. B. PHILLIPS, 181 Kingston Rd., Staines, Middx.  
 G4KN H. A. THOMSON, Brentor, New Road, Watchet, Somerset.  
 GW4KP F. T. SHORTEIDGE, "Anchorage," 6 York Road, Llandudno, Caerns.  
 G4NH L. BROOMHEAD, 3 New Road, Deepcar, Near Sheffield, Yorks.  
 G4NM A. H. GREENHALGH, 59 Stonesby Avenue, Southfield, Leics.  
 G5IA \*G. M. WHITELEY, 32 Branksome Drive, Nab Wood, Shipley, Yorks.  
 G5IJ \*F. R. NEILL, The Whins, Doegall Avenue, Whitehead, Belfast.  
 G5IY J. COWAN, 96 Mount Merriem Park, Rosetta, Belfast, N. Ireland.  
 G5SD D. E. CAMPBELL, 9 Sidecup Hill Gardens, Sidecuphill, Sidecup, Kent.  
 G5SV S. F. HARRIS, 93 Salcott Rd., Battersea, London, S.W.11.  
 G5UG \*J. ETHERINGTON, 229 Leyland Lane, Leyland, Near Preston, Lancs.  
 G5VB \*A. F. E. BOTT, 17 Amis Avenue, West Ewell, Surrey.  
 G5VF C. J. MATHEWS, Wirswall Cottages, Wirswall, Whitechurch, Salop.  
 G5WV H. HARPER, 31 Aydon Avenue, Corbridge, Northumberland.  
 G5XV \*R. Y. PARRY, Little Ingleburn, Malmesbury, Wilts.  
 G5YO \*J. REID, 172 Westoe Road, South Shields, Co. Durham.  
 G6AJ \*H. W. HAMBLEN, 35 Oakley Gardens, Chelsea, London, S.W.3.  
 G6JL W. B. P. WATSON, Torre Post Office, Torquay, Devon.  
 G6JQ \*W. W. STORER, Oak Lodge, Wanlip Rd., Syston, Leics.  
 G6QF \*W. K. MILLER, 37 Bee Fold Lane, Atherton, Lancs.  
 G6QL \*P. H. BERRY, 126 Eastcote Road, Pinner, Middx.  
 G6UQ \*H. J. KAYES, 31 Oak Road, Cheshire.  
 G6VVG W. J. RAINEY, 54 Pretoria St., Stranmillis, Belfast.  
 G6VK \*A. E. BROOKES, A.M.D.G.W. Bungalow, R.A.F. Station, Khormaksar, Aden.  
 G6YK \*G. A. EXETER, 7 Clifford Road, North Berwick, Scotland.  
 G8AT W. M. BEATTIE, 17 Raeden Av., Aberdeen, Scotland.  
 G8HT R. H. TAYLOR, 17 Warwick Rd., Coulsdon, Surrey.  
 G8LO \*H. F. BURTOFT, 473 Commercial Road, Portsmouth, Hants.  
 G8OD D. P. TAYLOR, c/o B.B.Corp., Skelton Pastures, Penrith, Cumb.  
 G8PV \*J. H. FREEMAN, 10 Chelmsford Place, Grimsby, Lincs.  
 G8RT \*J. P. TOURLE, "Winston," Tyler Avenue, Laindon, Essex.

- G8WV N. H. SEDGWICK, 3 Church End, Hanslope, Near Bletchley, Bucks.  
 2AAD A. A. S. HORDEN, Drummoyne House, St. Martin, Jersey, C.I.  
 2ABD F. A. TUCK, 111 Kingshill Avenue, Kenton, Harrow, Middx.  
 2ADT R. HILL, 101 Hurst Road, North Heath, Erith, Kent.  
 2AXW C. V. WITKOWSKY, 165A High St., Deptford, London, S.E.8.  
 2BOK H. M. BAWTREE, 22 Shirley Avenue, Cheam, Surrey.  
 2BQH \*L. D. PHILP, Cumberland Infirmary, Carlisle.  
 2BXL \*A. J. CRYER, 33 Princes Way, Fleetwood, Lancs.  
 2CJH A. W. H. WENNEL, 145 Uxendon Hill, Wembley Park, Middx.  
 2CVY W. H. J. YEO, Elberly Dairy, Newport, Barnstaple, North Devon.  
 2CWL C. K. HASWELL, 2 Laurel Cottages, Chiddingfold, Surrey.  
 2DDX \*F. C. SMITH, 11 Llewellyn Street, Cadoxton, Barry.  
 2DFG N. D. MATTOCK, "Albion House," Mortimer Street, Herne Bay.  
 2DNI E. G. BELL, 13 Rutland Street, Grimsby, Lincs.  
 2DOL C. H. GARRAWAY, 95 Sidwell Street, Exeter.  
 2DUR M. N. LAPPER, 264 Derwen Fawr Road, Blackpill, Swansea, S. Wales.  
 2DVD W. L. RIMMINGTON, 23 Hamilton Road, Ealing, London, W.5.  
 2DVP R. C. WESTON, 8 High Lee Green, Luddenden Foot, Halifax, Yorks.  
 2FBU \*J. C. M. GREIG, The Orchard, Whitmoor Common, Worpleston, Surrey.  
 2FCA A. E. BURNARD, 14 Stanhope Road, N. Finchley, London, N.12.  
 2FIP J. E. KIRK, 24 Marsham Road, Kings Heath, Birmingham, 14.

A CORDIAL WELCOME IS EXTENDED  
TO THE  
**500**  
NEW MEMBERS  
WHOSE NAMES ARE LISTED

- 2FKW A. J. C. LANE, 98 Wern St., Glydach Vale, Rhondda, Glam.  
 2FMO A. L. MILNTHORPE, 3 Winstor Drive, Thurinaston, Leicester.  
 2FSA R. L. HARVEY, "Hynton," Fulford Road, West Ewell, Surrey.  
 2FSX A. H. STEVENS, 17 Brockman Rise, Southend Village, Bromley, Kent.  
 2FQD A. L. ROGERS, 25A Arwenack Street, Falmouth, Cornwall.  
 2FUJ D. L. SYLVESTER-BRADLEY, 50 Green Hill, Weymouth, Dorset.  
 2HFO \*A. W. GRICE, 6 Bradmore Avenue, Ruddington, Nottingham.  
 2HGI W. J. PATERSON, 43 Roundwood Road, Ipswich, Suffolk.  
 2HGU C. T. BALL, 68 Main Road, Romford, Essex.  
 2HHK D. E. CORNWELL, 54 Cedarcroft Road, Hook Rise, Surbiton, Surrey.  
 2HJM H. J. D. NEWBURN, "Montbretia," Cleveland Ave., Holyhead.  
 2HKK E. R. LANGTON, 349 Canterbury Street, Gillingham, Kent.  
 2HLR J. A. FOSTER, 28 Beatrice Road, Bangor, Co. Down, Ireland.  
 2HML B. W. ALDWELL, 21 Shrewsbury Gardens, Belfast, N. Ireland.  
 2HNL \*A. R. GLOVER, 43 Maison Dieu, Richmond, Yorks.

## British Empire (Licenced Amateurs)

- EI6J \*W. H. COOMBS, 39 Highfield Park, Dundrum, Dublin, Ireland.  
 VQ4KTH J. L. TANNER, Signal Training Centre and Depot, E. A. Signals, P.O. Box 1002, Nanyuke, Kenya.  
 VQ6GH G. H. HILLIER, c/o "Moreby," Combe Down, Bath, Somerset.  
 VS3AD & VS1AC C. FOONG, 21 Pengkalalan Kapal, Alor Star, Kedah, Malaya.  
 VS7GT G. H. TODD, Brown's Cottage, Enstone, Oxon.

## Foreign (Licenced Amateurs)

- ON4AN J. F. MELLAERTS, 33 Rue Du Manège, Louvain, Belgium.  
 W2GDU F. W. SOMERS, 184 Lexington Ave., Freeport, N.Y., U.S.A.  
 W3DLG L. M. SWINGLE, 4723-48th Street, N.W., Washington, 16, D.C., U.S.A.  
 XC6AA W. BACKHOUSE, 63 Regent Street, Loughborough, Leics.

## British Receiving Stations (B.R.S.)

- 12,196 B. WALKER, 228 New Church Road, Hove 3, Sussex.  
 12,197 J. BATES, 22 Ewesley Road, Sunderland.  
 12,198 J. L. FREEMAN, 1 Essex Rd., Chingford, London, E.4.  
 12,199 A. J. YOUNG, 6 Buller St., Parkfield, Wolverhampton, Staffs.  
 12,200 A. M. BAKER, 183 Monmouth Road, London, N.9.  
 12,201 A. MACINTYRE, Ivy Cottage, Carnoch, Glencoe, Argyll.  
 12,202 D. G. LARCOMBE, "One Oak," Grange Rd., Worsley, Manchester.  
 12,203 A. R. TAYLOR, 4 Crownhill Park, Torquay, Devon.  
 12,204 B. KEVIN, 56A Southbury Rd., Enfield, Middlesex.  
 12,205 N. K. DAYKIN, 88 Valley Road, Ipswich.  
 12,206 D. M. H. COGMAN, 30 Downage, Hendon, London, N.W.4.  
 12,207 C. J. BAGGOTT, 9 Lynton Av., West Bromwich, Staffs.  
 12,208 F. LAKIN, 106 Norcliffe Rd., Norbreck, Blackpool, Lancs.  
 12,209 S. R. WOOD, 15 Conquet Terrace, Dunley, Northumberland.  
 12,210 A. W. BANNISTER, 10 Towton St., Moston, Manchester, 9.  
 12,211 G. ADAMS, 362 Station Rd., Wallsend-on-Tyne, Northumberland.  
 12,212 J. A. HUMBY, 22 Cambarin Drive, Oswestry, Shropshire.  
 12,213 H. HAMILTON, 477 Bolton Road, Bury, Lancs.  
 12,214 K. A. SILLIANCE, 28 Park Parade, Harlesden, London, N.W.10.  
 12,215 M. CATLOW, 97, Southfields Drive, Leicester.  
 12,216 R. K. GAMBLE, 4 Ridgeway Park, Portadown, Co. Armagh, N. Ireland.  
 12,217 C. E. CUNLIFFE, 4 Seaview Terrace, Waterloo, Liverpool, 22.  
 12,218 M. L. BERRY, 90 City Road, Birmingham, 16.  
 12,219 T. W. TAYLOR, 37 Mary St., Harpurley, Manchester, 9.  
 12,220 T. G. CONINGTON, 90 Palatine Road, Stoke Newington, London, N.16.  
 12,221 B. S. ELLAWAY, Westmancote, Bredon, Nr. Tewkesbury, Glos.  
 12,222 J. D. SPEECHLEY, 4, Sheppey House, Clarence Rd., Hackney, London, E.5.  
 12,223 D. A. SMITH, 49 Alric Avenue, New Malden, Surrey.  
 12,224 R. V. PARSONS, 74 Longlevens Lane, Gloucester.  
 12,225 S. WILLIAMS, "Dale-Vue," Tinsill Road, Cookridge, Leeds.  
 12,226 B. A. MARKLAND, 2 Willows Lane, Daubhill, Bolton, Lancs.  
 12,227 R. E. ARMSTRONG, 150A Landseer Av., Manor Park, E.12.  
 12,228 C. BOUCHER, "Lincot," Hestow Road, Kingsteignton, Devon. (Trans. from Associate Grade).  
 12,229 H. REAY, Kings Leigh, 2 Fawdry Street, Whitmore Reans, Wolverhampton.  
 12,230 E. S. KEOGH, 20 Auriston Road, Queen's Drive, Walton, Liverpool, 4.  
 12,231 M. H. BERRY, 20 Northcroft Road, West Ewell, Surrey.  
 12,232 E. F. WEBSTER, 20 The Drive, Isleworth, Middx.  
 12,233 H. W. SKENNETT, "Hove Park View," 57 Goldstone Crescent, Hove, 4, Sussex.  
 12,234 D. SLEIGHT, 36 The Paddock, Anlaby Park Road, Hull, Yorks.  
 12,235 K. W. MARCHANT, 40 Reeves Rd., Chelston, Torquay, Devon.  
 12,236 P. J. W. ROWELL, 7 Highfield Road, Northampton.  
 12,237 G. H. POTTS, 2 Gray's Inn Buildings, Rosebery Avenue, London, E.C.1.  
 12,238 A. LORD, 235 London Road, Headington, Oxford.  
 12,239 H. A. SPRINGALL, 59 Charnian Ave., Stanmore, Middx.  
 12,240 A. G. GOVES, Town Hall, High Wycombe, Bucks.  
 12,241 S. STORRES, 51 Silk St., Manningham, Bradford, Yorks.  
 12,242 H. BOWMAN, 6 Kelmscott Rd., Harborne, Birmingham, 17.  
 12,243 R. W. HANNA, 126 St. Vincent Street, South Shields, Co. Durham.  
 12,244 B. HAWKES, 14 St. Andrews Road, Cambridge.  
 12,245 E. CUMMINS, 4 Morton St., W. Hartlepool, Co. Durham.  
 12,246 R. H. A. BROWNING, 133 Mortlake Rd., Ilford, Essex.  
 12,247 H. DUNN, 8 Galway Avenue, Bispham, Blackpool, Lancs.  
 12,248 L. K. FRENCH, 87 North Circular Road, Stonebridge, London, N.W.10.  
 12,249 J. H. BLOOR, 9 Beech Ter., Fartown, Huddersfield, Yorks.  
 12,250 S. J. DALBY, Main St., Keyingham, Nr. Hull, E. Yorks.  
 12,251 W. A. CRAWLEY, 94 Barnsley Rd., Stairfoot, Barnsley, Yorks.  
 12,252 D. LEYS, Walker Avenue, Banff, Scotland.  
 12,253 C. H. HALL, 7 Burlew Ave., Harpur Hill, Buxton, Derby.  
 12,254 T. BRIDGE, 299 Bury New Road, Heywood, Lancs.  
 12,255 J. R. PIKETT, 93 Whitmore Road, Harrow, Middx.  
 12,256 R. R. DYSON, 16 Wyre Grove, Hayes, Middx.  
 12,257 A. S. WILSON, 269 Stenhouse Street, Cowdenbeath, Fife, Scotland.  
 12,258 W. J. GORNALL, 53 Pentonville Road, Islington, N.1.  
 12,259 C. F. AINSWORTH, Webton Court, Madley, Hereford.  
 12,260 A. W. MITCHELL, 32 Gordon Road, Aberdeen.  
 12,261 G. S. ROCKWOOD, c/o Thos. Cook & Son, Ltd., Berkeley Street, W.1.  
 12,262 H. J. R. HOOK, Kingwood Cottages, Sandhills, Wormley, Near Godalming.  
 12,263 G. C. TOOTILL, 5 The College, Great Malvern, Worcs.  
 12,264 D. YOUNG, 14 Allen Ave., Culcheth, Nr. Warrington, Lancs.  
 12,265 J. H. OAKES, 18 Shaw Heath View, Knutsford, Cheshire.  
 12,266 A. F. SCOTT, 21 Compton Rise, Pinner, Middx.  
 12,267 M. E. NICOLA, 230 Staines Rd., Sunbury-on-Thames, Middx. (Transfer from Associate Grade).  
 12,268 J. E. NORRIS, 10 High Street, Mortlake, London, S.W.14.  
 12,269 R. H. BETTINGTON, 27 Elston Fields, Park Est., Leicester.  
 12,270 K. W. WILTSIRE, 139 Cyfarthfa St., Roath, Cardiff, South Wales.  
 12,271 J. M. T. EVANS, 56 Ridgway Place, Wimbeldon, S.W.19.  
 12,272 K. W. LAWSON, 24 Heaton Road, Heaton Norris, Stockport, Lancs.  
 12,273 R. E. DEANE, 20 Montrose Gdns., Mitcham, Surrey.  
 12,274 A. COUSER, 26 Roadside, Cumbernauld, Glasgow, Scot.  
 12,275 D. C. TURNER, c/o 491 Ley Street, Ilford, Essex. (Transfer from Associate Grade).  
 12,276 E. C. HASTED, 26 Barnsley Road, Gillingham, Kent.  
 12,277 E. W. J. YORKE, High Street, Flore, Northampton.  
 12,278 F. L. H. JONES, 16 Gayhurst Rd., Dalston, London, E.8.  
 12,279 H. BETTS, 34 Cambridge Grove, Preston Rd., Hull, Yorks.  
 12,280 D. J. R. MARTIN, 88 Mysore Road, London, S.W.11.  
 12,281 H. G. MARTIN, 184 Kirby Rd., North End, Portsmouth.  
 12,282 P. SWIFT, 59 Surrey Grove, Sutton, Surrey.  
 12,283 G. E. A. ROTH, 72 Ashleigh Avenue, Bridgwater, Somerset.  
 12,284 E. L. BREWER, "Sandown," Middle Bourne, Farnham, Surrey.  
 12,285 J. T. MARRIS, 142 College Grove, Preston Road, Hull, E. Yorks.  
 12,286 J. W. PRATIDGE, 32 D'arcy Gardens, Kenton, Harrow, Middlesex.  
 12,287 A. E. READ, 7 Blakemere Road, Welwyn Garden City, Herts.  
 12,288 N. EDMONDSON, 19 Primrose Street, Morecambe, Lancs.  
 12,289 J. BOSTON, 23 Coventry Road, Chilvers Coton, Nuneaton, Warks.  
 12,290 W. G. HARRISON, 61 Church Road, Hayes, Middx.  
 12,291 T. E. SMITH, 103 Danube Road, Hull, E. Yorks.  
 12,292 G. EMMETT, 23 Symons Crescent, Parson Cross Estate, Sheffield, Yorks.  
 12,293 A. A. KENWORTHY, "Broadwood," Montrose Street, Brechin, Angus, Scotland.  
 12,294 I. WAGG, 22 Keelings Drive, Trent Vale, Stoke-on-Trent, Staffs.  
 12,295 F. G. WINFIELD, 4 Richmond Drive, Chilwell, Notts.  
 12,296 J. L. REID, 79 Clifton St., Roath, Cardiff, S. Wales.  
 12,297 R. H. DAVIES, 42 Cromwell Road, Hayes, Middx.  
 12,298 J. L. SHARDLOW, "Green Gates," Kingsway, Prestatyn, Flintshire.  
 12,299 F. W. J. PEARCE, 22 Andover Road, Winchester, Hants.  
 12,300 J. I. JONES, School House, Dinder, Near Wells, Somerset. (Transfer from Associate Grade).  
 12,301 J. M. BIRCH, 21A Seymour Rd., West Bridgford, Notts.  
 12,302 R. E. TAMS, 55 Lambert Avenue, Richmond, Surrey.  
 12,303 J. WARDEN, 4 Clenclova Terrace, Dundee, Scotland.  
 12,304 L. A. JACKSON, 24 Bramshill Gardens, London, N.W.5.  
 12,305 J. E. G. JOHNSTON, 62 South St., Cottingham, E. Yorks.  
 12,306 O. G. JONES, 56 Castle Street, Haugh, Bolton, Lancs.  
 12,307 R. J. BISSETT, 49 Church Street, Cromarty, Ross-shire. (Transfer from Associate Grade).  
 12,308 R. E. BASSETT, 17 Fore Street, Bodmin, Cornwall.  
 12,309 J. O. MCCABE, 21 Ramsay Street, Monifeth, Angus.  
 12,310 C. M. MACVEAN, 1 Townsend Road, Harpenden, Herts.  
 12,311 J. C. ULPH, "Mountbank," New St., Lymington, Hants.  
 12,312 E. WATKIN, 46 College View, Waterhouses, Co. Durham.  
 12,313 G. E. GREEN, 28 Shellada Crescent, Portslade, Sussex.  
 12,314 H. N. DALEYMPLE, 151 Blackthorn Road, Bitterne, Southampton.  
 12,315 S. G. HOWIS, 70 North St., Ashburton, Near Newton Abbot.  
 12,316 R. B. OLDERSHAW, 27 St. Andrews Road, Aylestone Park, Leicester.  
 12,317 P. R. HEELEY, "Wyncroft," Vale Road, Woolston, Liverpool.  
 12,318 L. BELL, 65 Main Street, Brampton, Cumberland.  
 12,319 J. W. SEAR, 35 Ember Gardens, Thames Ditton, Surrey.  
 12,320 R. B. CARNEY, 12 Bartlemas Close, Oxford.  
 12,321 F. A. ESTDALE, 88 Jarrow Road, Chadwell Heath, Romford, Essex.  
 12,322 F. NEWTON, "Gardenia," 43 Moore Road, Mapperley, Nottingham.  
 12,323 H. R. WELBY, 1 Cobnar Drive, Sheffield, S. Yorks.  
 12,324 J. C. BARGERY, 14 Highfield Hill, Upper Norwood, London, S.E.19.  
 12,325 H. J. McLAUGHLIN, 221 Old Park Rd., Belfast, N. Ireland.  
 12,326 J. A. ROBERTS, 13 Woodfield Drive, East Barnet, Herts.  
 12,327 F. M. MANNIE, 277 Arundel Street, Landport, Portsmouth, Hants.  
 12,328 A. E. HOLLINGSHEAD, H.Q. Mess, R. Signals, Catterick Camp, Yorks.



- 12,329 B. JONES, 92 Blantyre Road, Wavertree, Liverpool, 15.  
 12,330 T. J. HINDLEY, 349 Lordship Lane, Tottenham, London, N.17.  
 12,331 C. CHECKLEY, "Glen-Afton," West Drive, Bracklesham Bay, Sussex.  
 12,332 J. C. NEWMAN, 38 Creighton Close, Bloemfontein Road, S. Bush, London, W.12.  
 12,333 H. M. SNEDDON, Dunnikier Farm, Kirkcaldy, Fife, Scotland.  
 12,334 G. J. FERMOR, 13 Hamilton Crescent, Palmers Green, London, N.13.  
 12,335 R. L. ROBERTS, 399 Bowes Rd., New Southgate, London, N.11.  
 12,336 J. PERRY, 77 Burnt Oak Lane, Sidcup, Kent.  
 12,337 T. ELLIOTT, "Thaba N'Chu," Dungannon, Co. Tyrone, N. Ireland.  
 12,338 A. J. LA-BORDE, 154 Tollington Park, Finsbury Park, London, N.4.  
 12,339 W. S. RALPH, 119 Bohemia Road, St. Leonards-on-Sea.  
 12,340 D. T. WALKER, 9 Park Avenue (Top Flat), Dundee, Scotland.  
 12,341 H. P. SCOTT, 39 Shirley Gardens, Barking, Essex.  
 12,342 G. D. HORSLEY, "Thornfield," Newlay Wood, Horsforth, Near Leeds.  
 12,343 F. O. A. DAWKINS, 295 Margate Road, Ramsgate, Kent.  
 12,344 K. W. CLARK, 65 Worthing Road, Patchway, Bristol.  
 12,345 D. ILES, c/o 27 Russel Ave., Kingswood, Bristol, 5.  
 12,346 G. F. HARRIS, Dingle House, Garway Hill, Near Hereford.  
 12,347 G. W. KNOWLES, 6 The Croft, Green Lane, Halton, Leeds, Yorks.  
 12,348 R. E. SINGLETON, "Sandlands," 179 Stoke Road, Guildford, Surrey.  
 12,349 W. E. EVANS, 82 Newborough Road, Shirley, Near Birmingham, Works.  
 12,350 D. C. FREE, 62 Mawson Road, Cambridge.  
 12,351 E. G. CREASE, 11 Manton Close, Hayes, Middx.  
 12,352 F. G. GARRAD, 36 Livingston Rd., Southall, Middx.  
 12,353 H. GREEN, Barugh Coke Ovens, Gawber, Near Barnsley, Yorks.  
 12,354 R. L. BOULTON, "South View," South Road, Taunton, Somerset.  
 12,355 T. W. F. BARRIS, 71 Cedars Avenue, Coventry, Works.  
 12,356 E. C. GILBERT, 56 Western Way, Barnet, Herts.  
 12,357 B. E. SNEED, 46 Montalt Rd., Woodford Green, Essex.  
 12,358 G. L. HARRY, 7 Campton Green, Leamington Spa, Works.  
 12,359 J. HOLT, 284 Boulton Lane, Alveston, Derby.  
 12,360 P. W. MUXLOW, 40 Oxford Street, Grantham, Lines.  
 12,361 H. H. MESSAM, Mill Lane, Sheet, Petersfield, Hants.  
 12,362 H. J. HARE, 22 Lonsdale Drive, Enfield, Middx.  
 12,363 R. D. ROBERTS, Tyccrig, Penygarnedd, Oswestry.  
 12,364 E. V. HALL, 50 Chamberlain Avenue, Stoke-on-Trent, Staffs.  
 12,365 J. V. PHILLIPSON, "The Nest," Alcester Road, Wootton Waven, Birmingham.  
 12,366 C. R. STREET, Conies Farm, West Grinstead, Horsham, Sussex.  
 12,367 J. D. HILL, 66 Bessingby Road, Bridlington.  
 12,368 R. D. WILSON, 53 North Bridge Street, Airdrie, Lanarkshire.  
 12,369 J. A. CARR, The Elms, Newbold Pacey, Warwick.  
 12,370 T. D. HETHERINGTON, c/o McCormick, 67 Middleton Street, Glasgow, S.W.1.  
 12,371 P. M. HARRIS, 24 St. Andrews Rd., Coulsdon, Surrey.  
 12,372 L. C. GLAYSHER, Hope Cottage, Steepways, Hindhead, Surrey.  
 12,373 W. ISMAY, 96 Queen Mary's Road, Coventry, Works.  
 12,374 F. W. BOULTON, 62 Tixall Road, Stafford.  
 12,375 J. L. SIMMONDS, 59 Enfield Road, Brentford, Middx.  
 12,376 P. S. FUNNELL, 28 Dyke Road Drive, Preston Park, Brighton, 6.  
 12,377 J. HARDMAN, c/o Morven House, Thurso, Caithness, Scotland.  
 12,378 G. BARTON, 67 Tarrant Road, Arundel, Sussex.  
 12,379 J. E. DENISON, 43 Broadview Avenue, Rainham, Gillingham, Kent.  
 12,380 R. ODY, 53 Mayswood Gardens, Dagenham, Essex.  
 12,381 J. R. ERSKINE, 315 Rush Green Road, Romford, Essex.  
 12,382 E. N. EDEN, 34 Kingswood Road, Goodmayes, Essex.  
 12,383 R. W. CAREY, 20 Denison Close, Ossulton Way, East Finchley, London, N.2.  
 12,384 G. A. SKILLIN, 60 Peabworth Road, Harrow, Middx.  
 12,385 J. PORTER, "Radio," 22 College Street, Worcester.  
 12,386 G. M. IRELAND, 105 Perrywood Road, Great Barr, Birmingham, 22A.  
 12,387 H. C. CHINERY, The Lodge, St. Catherines Crescent, The Avenue, London, W.4.  
 12,388 R. A. HOOK, 114, Trenham Road, Penkhull, Stoke-on-Trent.  
 12,389 H. M. GILMOUR, 26 Park Road, Stretford, Manchester, Lancs.  
 12,390 N. ROBERTS, c/o Rev. C. L. S. Cotton, Lawhitton Rectory, Launceston, Cornwall.  
 12,391 J. BELLINGHAM, 19 Inkerman Street, Wolverhampton, Staffs.  
 12,392 S. LANGRAN, 4 Earlham Grove, Wood Green, London, N.22.  
 12,393 W. F. PEARSON, 3 Eccleburn Avenue, East Park Parade, Leeds, 9.  
 12,394 W. G. ALLEN, 30 Wycherley Crescent, Barnet, Herts.  
 12,395 S. H. J. WRIGHT, 4 Hill View, Melvin Close, Laverstock, Salisbury.  
 12,396 J. L. ULYATT, 57 North Road, Bourne, Lines.  
 12,397 J. A. PARKER, 33 Nightingale Lane, Wanstead, London, E.11.  
 12,398 B. C. G. FINLAYSON, 12 Wheatlands Rd., London, S.W.17.  
 12,399 B. SMITH, 101 Belgrave Road, Wyken, Coventry.  
 12,400 H. N. GUBBY, 39 Lydford Rd., Tottenham, London, N.15.  
 12,401 K. J. LLOYD, Bawnmore, Overslade, Rugby, Works.  
 12,402 C. TERRY, The Hermitage, Silver Street, Cambridge.  
 12,403 A. M. LEVY, 18 Glastonbury Ave., Belfast, N. Ireland.  
 12,404 J. WINSTANLEY, 27 Trinity Road, Wallasey, Cheshire.  
 12,405 R. A. FITZJOHN, Smeeth Road, Near Wisbech, Cambs.  
 12,406 J. C. HOLMES, 58 Staunton St., Deptford, London, S.E.8.  
 12,407 J. H. BOORMAN, 1 Pound Avenue, Stevenage, Herts.  
 12,408 N. R. NEALE, "Babnor," 38 Lea Crescent, Longlevens, Gloucester.  
 12,409 G. F. SHIPPERLEE, 27 Lynton Walk, Rhyl, N. Wales.  
 12,410 V. A. BAGNALL, 49 Wayside Ave., Hornchurch, Essex.  
 12,411 A. E. W. SHEPPARD, 28 Mill Lane, Chadwell Heath, Essex.  
 12,412 G. W. BAXTER, 124 Highfield Rd., Nuncaton, Works.  
 12,413 M. W. BERNER, 4 Arundel Avenue, Morden, Surrey.  
 12,414 W. G. DANDO, 1A Tyndal Rd., Lr. Knowle, Bristol, 3.  
 12,415 H. J. WOOD, 13 Hyde Park Gardens, Haugh Shaw Road, Halifax.  
 12,416 G. A. GIMBLE, 22 Cromwell Road, Forest Gate, London, E.7.  
 12,417 J. C. CONNOR, "Melford," Pelham Road, Southchurch, Southend-on-Sea.  
 12,418 D. N. WORSLEY, 40 Augustine Road, Drayton, Portsmouth, Hants.  
 12,419 J. M. GRAHAM, 2 Kelvinside Tee, West, Glasgow, N.W.  
 12,420 A. L. PASK, 15 Horton Street, Monks Road, Lincoln.  
 12,421 W. J. G. HECTOR, 11 Swan Hill, Shrewsbury, Salop.  
 12,422 F. ROGERS, 105 Seymour Avenue, Tottenham, London, N.17.  
 12,423 L. KINSMAN, 29 Farnelton Road, Rutherglen, Lanarkshire.  
 12,424 F. W. HARRISS, 16 Geneva Road, Thornton Heath, Surrey.  
 12,425 G. J. GOULD, "Clovelly," Broomfield Road, Chelmsford, Essex.  
 12,426 V. J. PORTER, The Street, Rickingham, Nr. Diss, Norfolk.  
 12,427 R. H. WILLIAMS, 36 Farmilo Rd., Leyton, London, E.17.  
 12,428 A. BELL, 20 Craigside Ave., West Derby, Liverpool, 12.  
 12,429 S. ELLIS, Braeside, Hillcrest, Townville, Castleford, Yorks.  
 12,430 B. R. PLANT, 66 Ferguson Road, Liverpool, 11.  
 12,431 J. B. TRUENAN, 141 Ince Avenue, Liverpool, 4.  
 12,432 J. N. HENDRIE, 120 Lindores Drive, Tranent, East Lothian.  
 12,433 C. F. BASSETT, 35 Dundonald Drive, Leigh-on-Sea, Essex.  
 12,434 K. B. LINDRIDGE, 40 Tunstall Road, East Croydon, Surrey.  
 12,435 S. A. RUTH, 48 Sea Brook Square, Crow Lane, Romford.  
 12,436 H. B. DAY, 9 Kingsdon Gdns., Gloucester.  
 12,437 W. C. EMERY, 87 Bond Road, Tolworth, Surrey.  
 12,438 C. H. DOLEY, 30 Mackenzie Road, Birmingham, 11.  
 12,439 J. H. CHADWICK, "Eryl Don," Promenade, Llanfairfechan, N. Wales.  
 12,440 E. DANDY, "Keswick," St. Andrews Road, Malvern, Worcs.  
 12,441 A. THORNTON, 19 Thornfield Avenue, Lockwood, Huddersfield.  
 (Transfer from Associate Grade.)  
 12,442 H. S. GARDNER, 12 Woodside Road, Kingston-on-Thames, Surrey.  
 12,443 P. M. EVANS, 62 Wychwood Avenue, Luton, Beds.  
 12,444 S. W. RICHARDS, 35 Gatton Rd., Hampstead, London, N.W.3.  
 12,445 T. J. HOLDWAY, 64 Station Road, Westbury, Wilts.  
 12,446 J. S. SUTTIE, High Street West, Falkland, Fife.  
 12,447 E. R. HARDY, 2 Oliver's Lane, Stotfield, Beds.  
 12,448 R. P. SHEARER, 200 Bardowie Street, Possilpark, Glasgow.  
 12,449 T. R. T. DICKSON, Glodwick Lodge, Alexandra Park, Oldham, Lancs.  
 12,450 W. C. PERCY, 8 Aldermanhill Rd., Dumfries, Scotland.  
 12,451 S. W. H. TWADDLE, 37 Southend Villas, Crook, Co. Durham.  
 12,452 R. T. R. COCKS, Chyvean, Perranuthnoe, Penzance, Cornwall.  
 12,453 K. J. VICKERY, 6 St. Pauls Wood Hill, Chislehurst, Kent.  
 12,454 T. CARRUTHERS, 22 Chesterton Grove, Cirencester, Glos.  
 12,455 F. G. SARGENT, 5 South Devon Place, Ridgeway, Plympton, Near Plymouth.  
 12,456 C. A. WIGHT, 153 Goddard Avenue, Swindon, Wilts.  
 12,457 A. MASTERMAN, 73 Shrewsbury Road, Nottingham.  
 12,458 T. FIGGITT, 56 Whitmore Road, Small Heath, Birmingham, 10.  
 12,459 T. E. TYLER, 20 Rochester Way, Croxley Green, Rickmansworth.  
 12,460 F. C. CHAMBERS, 5 Hillside Close, Thorpe-next-Norwich, Norfolk.  
 12,461 D. G. LALE, 48 Broadway, Sandown, Isle of Wight.  
 12,462 J. R. DAWSON, 72 Arbutus Drive, Coombe Dingle, Bristol, 9.

- 12,463 G. A. PICKETT, 54 Beach Lane, Stretton, Burton-on-Trent.  
 12,464 H. WORSFOLD, 59 Marston St., Cowley Road, Oxford.  
 12,465 E. DUFFEY, 24 Brooke Road East, Waterloo, Liverpool, 22.  
 12,466 W. P. TILL, 35 Blyth Road, Hayes, Middx.  
 12,467 A. J. BEAL, 57 Pollard Hill South, Norbury, London, S.W.16.  
 12,468 T. H. STORR, 343 Southbourne Grove, Westcliff-on-Sea, Essex.  
 12,469 A. T. ELEY, 162 Franklin Road, Birmingham, 30.  
 12,470 A. H. S. BRIDGMAN, "Overslade House," Bilton Road, Rugby, Warks.  
 12,471 P. H. HORN, 111 Taunton Rd., Bridgwater, Somerset.  
 12,472 N. H. PETTIFOR, 23 Willis Avenue, Sutton, Surrey.  
 12,473 A. F. CADDICK, 5 Woodstock Road, Croydon.  
 12,474 F. A. HERRIDGE, 95 Ramuden Road, Balham, London, S.W.12.  
 12,475 E. HOMEWOOD, 35 St. Johns Rd., Penge, London, S.E.20.  
 12,476 H. KLAPPER, 21 Leicester Cres., Clapton, London, E.5.  
 12,477 J. T. ROBBINS, 39 Linwood Road, Handsworth, Birmingham, 21.  
 12,478 R. E. NEWITT, 10 Tunley Rd., Balham, London, S.W.12.  
 12,479 D. D. EVANS, 38 Furzefield Road, Welwyn Garden City, Herts.  
 12,480 P. A. MANCHEE, "Stone House," 8 Brewer Street, Maidstone, Kent.  
 12,481 A. F. PRIVETT, 4 Winchester Road, Ilford, Essex.  
 12,482 W. H. TANSER, 3 Pychley Road, Rugby, Warks.  
 12,483 R. L. BLAKE, 9 Winter Road, Norwich, Norfolk.  
 12,484 A. R. THOMSON, 13 Glenogil Gardens, Anstruther, Fife.  
 12,485 W. S. WARD, 112 Glenwood Avenue, Westcliff-on-Sea, Essex.  
 12,486 H. G. HENDERSON, 33 Rossend Gardens, Burntisland, Fife.  
 12,487 F. JONES, 15 Council House, Bluntisham, Hunts.  
 12,488 T. SMEDLEY, "Trelawney," North End, Yatton, Somerset.  
 12,489 W. P. BURNINGHAM, 61 Sutherland Grove, Southfield, London, S.W.18.  
 12,490 F. GOODLIFE, 23 Lancaster Road, Uxbridge, Middx.  
 12,491 J. L. HUGHES, 48 Frogmore St., Abergavenny, Mon.  
 12,492 E. W. BATTEN, 98 Parkwood Road, Boscombe, Bournemouth, Hants.  
 12,493 D. A. AYLETT, 89 Wilmington Gardens, Barking, Essex.

**British Empire Receiving Stations (BERS)**

- 291 \*W. R. SHORE, c/o Municipality, P.O. Box 440, Mombasa, Kenya.  
 630 R. K. SOUTTER, Polaris Street, Temora, N.S.W., Australia.  
 632 B. M. CHAKRABARTY, Royal Signals, H.Q. Mess, Catterick Camp, Yorks.  
 633 D. M. AMBROSE, c/o Mr. T. M. C. Walker, 28A Milner Road, Bloemfontein, O.F.S., South Africa.  
 634 B. LAKSHMANAN, Tote Assistant, M.R.C. Guindy, Madras, S. India.  
 635 M. K. KANTAWALA, P.O. Box 88, Dar-Es-Salaam, Tanganyika, E. Africa.  
 636 S. C. WOOLMER, Improvement Trust, Municipal Offices, Singapore.  
 637 J. F. WALDEGRAVE, P.O. Box 25, Kilindini, Kenya Colony.  
 638 W. C. A. EVANS, c/o Mr. G. W. ROBINS, P.O. Box 1251, Nairobi, Kenya.

**Foreign Receiving Stations (F.R.S.)**

- 161 N. FEISER, Avichail, Nathanya, Palestine.  
 162 E. W. DENNETT, c/o Bapco, Box 22, Bahrain Island, Persian Gulf.  
 163 R. A. C. PREVETT, Boulevard Artigas 607, Montevideo, Uruguay.  
 164 R. GOLDBERGER, P.O. Box 4150, Tel-Aviv, Palestine.  
 (Transfer from Associate Grade.)  
 165 A. J. MICALLEF, Dahan Street, Camp-Cesar, Alexandria, Egypt.

**British Receiving Stations (B.R.S.)**

- 371 \*W. A. TIMBRELL, 28 Kemmel Lines, Catterick Camp, Yorks.  
 1105 \*J. H. OWEN, 12 Delleott Close, Welwyn Garden City, Herts.  
 1414 \*H. SWIFT, 112 Markham Road, Winton, Bournemouth, Hants.  
 1859 \*D. D. THOMAS, Greenacres, Trescobas Road, Falmouth, Cornwall.  
 2630 \*D. L. PELHAM, "Annan," 18 Selva Lane, Mill Lane, N.W.7.  
 2640 \*K. A. HUGHES, 8 Manor Hill, Cloughton, Birkenhead, Wirral.  
 3383 \*E. P. WILLS, 6 St. Michaels Square, Gloucester.  
 3526 \*R. A. NORRINGTON, 13 Fulshaw Avenue, Wilmslow, Near Manchester.  
 3537 \*C. TAMKIN, 80 Ashford Road, Brighton, 6, Sussex.  
 3624 \*P. A. O. NORTHY, 4 Highfield Court, Highfield Road, N.W.11.  
 4113 \*F. R. NICHOLSON, 40 Nower Road, Dorking, Surrey.  
 4340 \*J. C. FUNNELL, Officers' Mess, R.A.F., Calshot, Hants.  
 5151 \*L. LEDWARD, 457 Otley Road, Undercliffe, Bradford, Yorks.  
 5176 \*C. PAXTON, 3 Elm Gardens, Mitcham, Surrey.  
 7210 \*A. S. WITTS, 21 Morningson Road, Chingford, London, E.4.

**Associates**

- A. ANDERSON, 44 Highfield Road, Rock Ferry, Cheshire.  
 J. B. BAGWELL, 96 Wesley Avenue, Hounslow, Middx.  
 A. H. BARNETT, 341 South Canon, D.C., Beverley Hills, California, U.S.A.  
 E. E. CAINE, 105 Welwyn Road, Erdington, Birmingham, 24.  
 K. A. CHILVERS, School House, Gillingham, Eye, Suffolk.  
 F. W. CLAPTON, 1 Sage Cross Street, Melton Mowbray, Leics.  
 C. CLARKE, 3 Clyde Street, Old Hill, Staffs.  
 MRS. A. CLIPSTONE, 77 Julian Road, West Bridgford.  
 E. COOPER, Bariveda, 55 Sidney Road, Walton-on-Thames, Surrey.  
 S. EDEN, 5 Bentley Road, Salford, 7.  
 A. ENGLISH, 186 Lewisham Road, River, Dover, Kent.  
 J. ENGLISH, Hyde House, Beeding, Steyning, Sussex.  
 W. J. ENSCOTT, 75 Tom's Lane, King's Langley, Near Watford, Herts.  
 W. B. FEILEY, 4 Warroch Street, Anderston, Glasgow, C.3, Scotland.  
 A. L. FRANCIS, 10 Longbeach Road, Battersea, London, S.W.11.  
 A. R. FREEMAN, 28 Riverside, Hendon, London, N.W.4.  
 L. GASK, 274 High Street, Bromley, Kent.  
 S. R. GAY, 58 Leadale Avenue, Chingford, London, E.4.  
 J. R. HAMMERTON, 1 Eastfield Cottages, Bell Lane, Enfield, Mdx.  
 T. F. C. HARVEY, 54 Western Road, Wolverton, Bucks.  
 E. E. HAYDOCK, 12 Dorset Street, Sheffield, 10.  
 W. HIGHCOCK, 19 Washway Lane, Haresfinch, St. Helens, Lancs.  
 C. J. HUGHES, 35 Approach Road, Old Ford Road, Bethnal Green, London, E.2.  
 P. H. W. LAVALLIN, 75 Holly Hill Road, Erith, Kent.  
 L. MOON, 554 Shanghai Street, 3rd Floor, Mongkok, Kowloon, Hong Kong.  
 B. P. L. MOORE, 60 Ward Avenue, Bangor, N. Ireland.  
 R. C. MURDEN, 4 Holmedale Road, Bexley Heath, Kent.  
 N. K. MURCH, c/o 49 Copnor Road, Copnor, Portsmouth, Hants.  
 D. J. MCANALLY, 6 Florida Street, Mount Florida, Glasgow, Scotland.  
 T. NORMANTON, Heights Villa, Heights Lane, Rochdale, Lancs.  
 A. H. ONSLOW, 10 Egmont Road, Hove, 4, Sussex.  
 G. ROBINSON, 23, Mundesley Road, North Walsham, Norfolk.  
 B. E. RODRIGO, "Ranjana," Kalubovilla Road, Dehiwala, Ceylon.  
 C. RYDER, 3 Blands Hill, Knaresborough, Yorks.  
 E. A. E. SALEH, 87 Randolph Avenue, London, W.9.  
 M. SHERIDAN, Legnah, Castletown, Navan, Co. Meath, Eire.  
 G. W. SMITH, "Rosdene," Chesterfield Road, Brimington, Near Chesterfield.  
 P. M. SMITH, The Nook, Hampton Evesham, Wores.  
 G. N. STEVENSON, 14 Trevoze Gardens, Sherwood, Nottingham.  
 E. J. TIBBLE, 39 Beacon Park Road, Plymouth, Devon.  
 MISS S. TOLKIN, 58 Shirehall Park, Hendon, London, N.W.4.  
 L. TULLY, 52 General Havelock Road, Ford Estate, Sunderland, Co. Durham.  
 G. W. J. VAN WALKER, Woodfarm Camp, Malvern Wells, Wores.  
 A. WALTERS, "Rose Bank," Derby Road, Wingerworth, Near Chesterfield.  
 H. E. WATTS, 64 Portland Road, Worthing, Sussex.  
 D. WEIWO, 15 Farm Hill Square, Meanwood, Leeds, 7.  
 E. WILCOCK, 11 Poorfield Street, Oldham, Lancs.  
 E. G. WILLIAMS, Ashted Park, Ashted, Surrey.  
 J. R. WOODS, 13 The Neuk, Wishaw, Lanarks, Scotland.  
 G. S. YEMM, 2 Basford Park Road, Basford Park, Newcastle, Staffs.

**Junior Associates**

- R. W. BARNES, 239 Winebank Avenue, Sheffield, 5.  
 L. R. DAVIES, 54 Finger Road, Dawley, Shropshire.  
 J. N. DOBBS, Fieldways, Claverton Down, Bath.  
 C. T. DOLLERY, White House, Burton Road, Lincoln.  
 L. EVANS, 2-4 George Street, Luton, Beds.  
 A. P. GAUGLIA, 49 Windmill Hill, Enfield, Middx.  
 P. A. J. GIBB, 21 Cornwell Grove, Chiswick, London, W.6.  
 R. M. HOBSON, 58 Loveridge Avenue, Chatterlands Avenue, Hull, E. Yorks.  
 F. R. HORN, 146 Yew Tree Road, Fallowfield, Manchester, 14.  
 B. A. KEMP, Norwich Road, Reepham, Norfolk.  
 A. R. MORTON, Ye Olde School House, Kenilworth, Warks.  
 R. F. NAYLOR, Rydal Mount, 41 Hospital Road, Riddlesden, Keighley, Yorks.  
 D. R. PENTLOW, 65 St. John's Road, Slough, Bucks.  
 A. M. PARK, 73 Woodlands Road, Surbiton, Surrey.  
 K. ROBERTS, 14 Park Avenue, West Bridgford, Notts.  
 L. A. SINGER, "Southview," Hillcrest Gardens, Finchley, London, N.3.  
 B. SKILLICORN, 44 Lynnbank Road, Liverpool, 18.  
 H. V. STACEY, "Sandlacs," Eddisbury Road, West Kirby, Wirral, Cheshire.  
 D. R. VEZEY, 2 Hafren Road, Barry, Glam.  
 J. A. WARD, Little Binn Wood, South Lane, Ash, Surrey.  
 A. R. WILBY, "Gandria," Lees Road, Anderton, Near Chorley, Lancs.  
 J. T. WINSON, 12 Eversley Avenue, Wembley Park, Middx.  
 S. J. WOLLIN, Belfield, 16 Mossley Avenue, Bromboro, Ches.  
 D. WOODS, 125 Lenthall Avenue, Grays, Essex.

**Corrections to May List**

- G5BR should read G5CR G. L. BROWNSON, 20 Courtlands Ave., Hayes, Bromley, Kent.  
 BR54284 (not Associate as previously listed) H. O. ARRIDGE, 52 Penchwinant Road, Bangor, Caerns.

\* Denotes Re-elected.

# R.S.G.B. BULLETIN

OFFICIAL JOURNAL OF THE INCORPORATED RADIO SOCIETY OF GREAT BRITAIN

Published on or about the 15th of each month. Issued free to members.

General Editor : JOHN CLARRICOATS.

Editorial Office :

NEW RUSKIN HOUSE,

LITTLE RUSSELL STREET, LONDON, W.C.1

Telephone : Holborn 7373.



Advertisement Manager : HORACE FREEMAN

Advertising Office :

PARRS ADVERTISING LTD.,

121 KINGSWAY, LONDON, W.C.2

Telephone : Holborn 2494

Honorary Editor : ARTHUR O. MILNE.

VOL. XXI

JUNE, 1946

No. 12

## SAFETY IN THE SHACK

FAMILIARITY with the dangers associated with the high voltages that we use in our transmitters does not safeguard us from making tragic mistakes. Too many of the best men in Amateur Radio have lost their lives by electrocution—not by lack of knowledge or blustering carelessness, but by the slightest deviation from the established principles of safe practice.

Prior to the war a committee appointed by the Council drew up a set of recommendations which it was hoped would lead to greater safety in amateur stations. Its object was to *advise*, not to make a set of rules and regulations. Rules are formulated when an authority seeks to exert some form of *control*. The safety recommendations formulated by the committee are in the interests of the members themselves, and it is left to each member to control his own activities by observing his own rules.

The following points, selected from Council's recommendations, deserve the serious attention of every member, old-timer and newcomer alike.

1. It is generally recognised that orderliness in the layout of an amateur station is the keynote of safety. To this end all apparatus and wiring should be so placed that it is impossible to receive a high-voltage shock under normal operating conditions. It is appreciated that when bench tests and general experiments are being carried out, it is not always possible to evolve a systematic layout. Such cases should be treated with special care and with a full awareness of the potentials likely to be set up between components, wiring and earth.

2. It is advised that all high-voltage gear, including filter condensers and valves, should be enclosed, preferably in an earthed metal case.

3. All high-voltage wires should be suitably insulated and kept as short as possible and be led by the shortest possible route from one terminal point to another. Such wires could with advantage be coloured distinctively.

4. Anode tank coils and aerial coupling coils should be mounted on porcelain or similar insulators. Clip connections when used should be of the positive-grip type and preferably fitted with insulated sleeves. The H.T. should always be switched off when making adjustments; or still better, an automatic safety switch should be provided.

5. When the transmitter is operated from public supply mains the aerial should not be directly connected to the anode coil of the output valve (see Note in G.P.O. Licence).

6. A double-pole switch-fuse of the iron-clad type should be fitted on the mains side of the rectifying or high-voltage gear. This switch should be clearly marked with ON-OFF positions and should be mounted in a position which will permit it to be operated without difficulty before adjustments are made to the transmitter. The switch should be arranged so that when in the OFF position the fuses are "dead," thus permitting their easy replacement in the event of an overload. Detachable clip fuses are recommended.

7. It is advised that a pilot lamp of the neon type be fitted across the primary circuit close to the output side of the double-pole mains-switch. The lamp should be so mounted as to be clearly visible to the operator at all times. It is further suggested that small neon lamps or indicators be inserted in each H.T. supply.

8. Transformer cases, lead sheathed cable, cores and other metal work should be connected together by means of copper wire of a size not less than 7/22 s.w.g. and then connected to an effective earth. Gas pipes should never be used for this purpose.

9. Bleeder resistances, provided to drain away accumulated charges, should be connected across the terminals of all fixed condensers used in smoothing circuits working at voltages in excess of 200 volts.

10. Morse keys connected in H.T. circuits should be of the enclosed insulated type.

11. Insulated extension spindles should be fitted to transmitter tuning condensers.

12. Common connections should not be bunched under one terminal unless a number of terminal nuts are provided. A bus-strip fitted with terminals or connecting screws is advocated, in order that each wire may be terminated separately. Flexible wiring should be provided with spade terminals or other suitable connectors.

13. It is desirable that some other person in the house should know how to switch off at the main switch in the event of an emergency. Provision should, however, be made to prevent the operation of the main switch by unauthorised persons or by children in the absence of the operator.

14. Telephones and microphones should be isolated from H.T. circuits by isolating transformers, the cores of which should be earthed. Shields between the primary and secondary windings are recommended. Microphone stands also should be earthed.

(Continued on page 184)

# RECENT ADVANCES IN THE MEASUREMENT OF FREQUENCY\*

By L. ESSEN, Ph.D., A.M.I.E.E. (Radio Division, National Physical Laboratory)

## PART II

### The Measurement of an Unknown Frequency

I have now discussed the work that has been done to improve the working standard of time at the Observatory, and the advances that have been made in the design of frequency standards and substandards. It is now time to turn to the problem of the measurement of an unknown frequency in terms of the substandard. In this field there have been three important developments in recent years. The first two seem to me to reflect our changing attitude to the electronic valve. At first we tended to use it rather cautiously, designing the apparatus so as to employ as few as possible, but we now think of the end in view rather than the complexity of the apparatus. If the final instrument is simple to operate it does not matter how many valves are used, or how complicated the circuits may be inside the box.

Now you will remember that in the first diagram (Fig. 1), the simplest arrangement of apparatus for the measurement of frequency was shown. The standard signals of 1 Mc/s., 100 kc/s. and 10 kc/s., and their harmonics, are all coupled to the receiver, together with the signal to be measured. The drawback to this scheme is that a certain amount of skill is required to distinguish between the various heterodyne notes that are heard, and to interpret the results correctly. Finden<sup>12</sup> has described an apparatus, which he calls a frequency synthesiser, to overcome this difficulty (Fig. 9). As before the quartz substandard oscillator controls harmonic oscillators at frequencies of 1 Mc/s., 100 kc/s., 10 kc/s. and 1 kc/s. But instead of the whole series of frequencies being coupled to the receiver, the appropriate harmonics are selected and mixed and the product is filtered at each stage. By this means any frequency up to 10 Mc/s. which is a multiple of 1 kc/s. can be built up and selected as a reasonably pure note. There is one

complication. Suppose we want a frequency of 81 kc/s. If we select the first harmonic of the 1 kc/s. generator, and the eighth harmonic of the 10 kc/s. generator, and mix them, the modulation products are 81 kc/s. and 79 kc/s., which are too near in frequency to be separated adequately by an ordinary filter circuit. What is done, therefore, is to select the ninth harmonic of each stage, and the products are then 81 kc/s. and 99 kc/s. which can be readily separated by the filter. Throughout all the stages, therefore, the harmonics selected are those which enable the modulation products to be separated most completely. At the same time it is arranged by a system of masks that the dial readings correspond to the required frequency.

The second improvement in frequency measurement depends on the application of electronic counters. It has just been shown how it is possible to build up frequencies from controlled oscillators, but it is not convenient to space these closer than 1 kc/s.

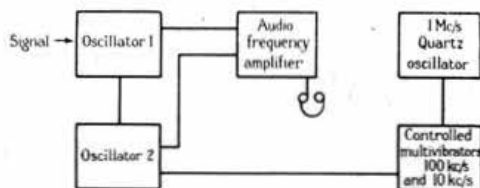


Fig. 10.  
Schematic diagram of frequency meter.

apart. There is in general, therefore, a residual frequency difference between the controlled frequency and the signal, which has in the past been measured by low frequency oscillators or by interpolation methods. By means of counters, it is now possible to record frequencies up to 100 kc/s. on a direct reading dial, with a very high accuracy. Again it is a complicated piece of apparatus, but it supplies the answer accurately and with the maximum convenience. The third improvement is the extension of the frequency range to the high values used during the last few years; and I shall now describe a portable instrument<sup>13</sup> which has been used extensively at the National Physical Laboratory for the measurement of frequencies up to 10,000 Mc/s. The conventional heterodyne method is used as is shown in the schematic diagram (Fig. 10). There are two calibrated oscillators, one covering the frequency range 300–600 Mc/s., and the other the range 15–20 Mc/s. These are followed by an audio amplifier and telephones. A substandard quartz oscillator controls harmonic generators at frequencies of 100 kc/s. and 10 kc/s. In order to measure the frequency  $f$  of the signal (Fig. 11), the latter is coupled to the first oscillator and a heterodyne note is obtained between the signal and the  $n$ th harmonic of the oscillator. The frequency of oscillator 1 is thus set at the value  $f/n$ . Similarly a heterodyne note is obtained between oscillator 1 and the  $m$ th harmonic of oscillator 2. The frequency of oscillator 2 is thus set at  $f/mn$ , where  $m$ , and  $n$  are in general known from the direct reading calibration of the oscillators. They can, if necessary, be checked by observing the frequency difference between the settings of the

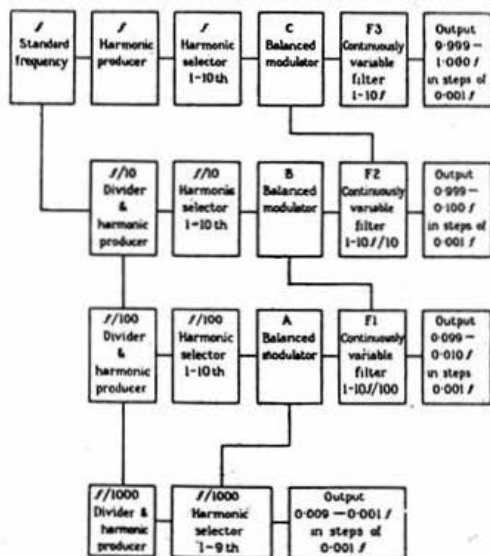


Fig. 9.  
Block diagram of the frequency synthesiser.

\* A Lecture delivered to the Society on March 15th, 1946.



oscillators corresponding to successive harmonics. The direct reading scale of oscillator 2 gives its frequency with an accuracy of 1 part in 2,000, but to obtain the value more accurately, the interpolation scales and crystal controlled oscillators are used. The direct reading dial is set at the 100 kc/s. point below that corresponding to the heterodyne note with oscillator 1. The first interpolation dial is then rotated, and the number of heterodyne notes obtained with the harmonics of the 10 kc/s. generator are counted until the heterodyne with oscillator 1 is again heard. The dial is set at the 10 kc/s. point below this. The index finger on the second interpolating dial is set so that the extreme ends of its scale corresponds to neighbouring 10 kc/s. points above and below the heterodyne note with oscillator 1 and the frequency corresponding to the latter is then read on this scale with an accuracy of 20 c/s.

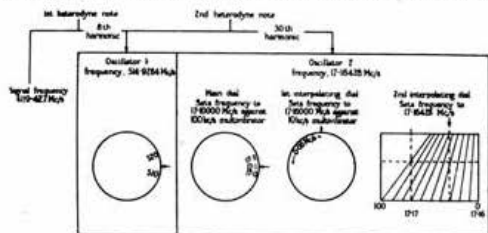


Fig. 11.

Illustrates the use of the wavemeter and shows the final settings of the dials.

To obtain the frequency of the signal this value must be multiplied by the factor  $mn$ . The final settings of the dials can be made in a few seconds and the frequency drift of the oscillators during this time is very small. The accuracy of the measurement is of the order of 1 part in  $10^6$ .

The circuit (Fig. 12), does not, I think, call for much comment. For oscillator 1 a rather special circuit, known as the "butterfly" circuit, is used, and I shall describe this in more detail in connection with resonant wavemeters. Both the oscillators act as frequency changers so that no separate detector circuits are involved. The harmonic generators are multivibrators using triode-pentode valves. This instrument as described is intended particularly for the measurement of frequencies of 1,000 Mc/s. and upwards. If frequencies between 100 Mc/s. and 1,000 Mc/s. are to be measured the first

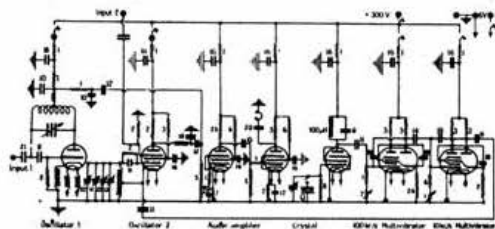


Fig. 12.

Circuit details of the wavemeter.

Resistances.			
1	10,000 ohms	5	500,000 ohms
2	20,000 ohms	6	1 megohm
3, 4	30,000 ohms	7	2,000 ohms
		25	250,000 ohms
Valves.			
1	955	2,3,4,5	EF36
		6,7,	ECH 35
Condensers.			
9	20 $\mu\mu\text{F}$	14	10 $\mu\mu\text{F}$
10	100 $\mu\mu\text{F}$	15	0.01 $\mu\text{F}$
11	1 $\mu\mu\text{F}$	16	8 $\mu\text{F}$
12	0.001 $\mu\text{F}$	17	50 $\mu\text{F}$
13	Micrometer Condensers	18	200 $\mu\mu\text{F}$
		19	2000 $\mu\mu\text{F}$
		20	2 $\mu\text{F}$
		21	< 1 $\mu\text{F}$
		22	25 $\mu\mu\text{F}$
		23	50 $\mu\mu\text{F}$

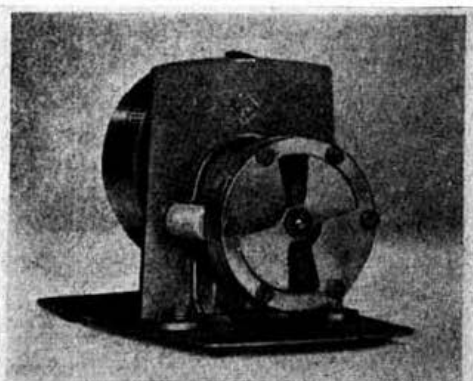
oscillator could be dispensed with, and for lower frequencies still, the second oscillator should have a lower frequency.

That completes the account of the measurement of a frequency in terms of the fundamental standard. We have seen that at all stages of the measurement substantial advances have been made in the last few years.

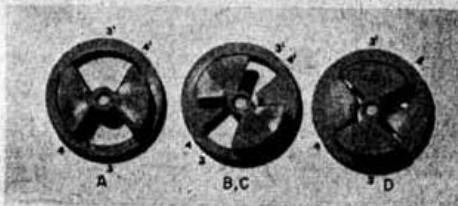
### Resonant Wavemeters

The simplest form of wavemeter consists of an electrical circuit which can be tuned to resonance with the signal to which it is coupled. In general the instrument needs to be calibrated and the frequency is then read directly on a scale. Circuits built up from separate condensers and inductors can be used at frequencies up to 60 Mc/s., although the accuracy that can be achieved at the higher part of the range is only about 0.5 per cent. In these instruments the detector of resonance is usually a valve voltmeter connected across the circuit. A somewhat similar circuit has been developed<sup>14</sup> for use up to frequencies of the order of 2,000 Mc/s. It can be compared with a series gap condenser with two banks of fixed plates strapped together as can be seen in Fig. 13. As the movable plates are rotated, both the capacitance and inductance are changed, and a very wide tuning range is obtained. The whole range is covered by a rotation of 90°, so that the length of scale is restricted and the reading accuracy is not high. This circuit will, however, find many applications. If a valve is incorporated in the circuit, a very convenient oscillator is obtained.

The region of frequencies between 10 Mc/s. and 1,000 Mc/s. is a difficult one as far as resonator wavemeters of high precision are concerned, because it is difficult to design circuits which have a sufficiently



120- to 1100-megacycle butterfly circuit.



Stator and rotor plates of butterfly circuit. Capacitance and inductance between points 1 and 2 on the stator are at maximum in A and at minimum in D.

Fig. 13.

low decrement to give a sharp response and a high reading accuracy. At frequencies above 1,000 Mc/s., however, resonant circuits consisting of lengths of coaxial line or waveguide can be used. These circuits can be designed to have Quality Factors far higher than can be achieved with condenser and inductance circuits, and they form very simple and accurate wavemeters. To demonstrate the simplicity of the coaxial line circuit, I have made a simple line from ordinary telescopic tubing. It is coupled by means of small loops at each end of the line to an oscillator and to a crystal valve detector, the output of which is connected to a galvanometer. As the length of the line is changed, sharp resonances occur at distances of one half wavelength. A rough scale engraved on the tube enables the wavelength to be measured with an accuracy of better than 1 per cent. A well-made coaxial line instrument gives an accuracy of 1 part in 1,000. Waveguide wavemeters can be used with a precision of better than 1 part in 10,000, though in general they require to be calibrated by means of a heterodyne wavemeter.

### Conclusion

I hope it is clear from this short review of frequency measurement that in spite of the high accuracies that can be obtained, the technique of the measurement of an unknown frequency in terms of the frequency standard is essentially a simple one. With the heterodyne method an accuracy of 1 part in  $10^6$  can be obtained. Higher accuracies of the order of 1 part in  $10^8$  can be achieved, although the apparatus required then becomes much more complicated. The standards themselves are known with an accuracy of 1 part in  $10^8$ , and under the impetus of the drive to achieve such a precision the Observatory clocks and the time signals have themselves been improved by a factor of about ten to one in recent years.

The techniques of time and frequency measurement have many applications outside the radio field, and I think it may be said that in such applications, the accuracy achieved will in no case be limited by the accuracy of measuring frequency.

I should like to thank Mr. Gordon-Smith for assisting in the demonstrations, and the Post Office Research Station for their courtesy in lending me the quartz crystal exhibits.

### REFERENCES

1. A. Scheibe and U. Adelsberger: "Variations in the Astronomical Daily Length and Time Determinations According to the P.T.R. Quartz Clocks." *Physikalische Zeitschrift*, 1936, 37.
2. H. Spencer Jones: "The Measurement of Time." *Endeavour*, 1945, 4, 123-130.
3. H. Gockel and M. Schuler: "A New Self-maintained Schuler Clock and the Rate Between Two Schuler Pendulums." *Zeitsf. Physik*, 1938, 109, 433.
4. L. Essen: "A New Form of Frequency and Time Standard." *Proc. Phys. Soc.*, 1938, 50, 413-423.
5. L. Essen: "International Frequency Comparisons by Means of Standard Radio Frequency Emissions." *Proc. Roy. Soc. A.*, 1935, 149, 506-510.
6. L. Essen: "International Frequency Comparisons by Means of Modulation Emissions." *Journ. I.E.E.*, 1934, 75, 289-292.
7. W. P. Mason: "Low Temperature Coefficient Crystals." *Bell System Tech. Journ.*, 1940, 19, 74-93.

8. W. P. Mason: "A New Quartz Crystal Plate Designated the G.T., which Produces a Very Constant Frequency Over a Wide Temperature Range." *Proc. I.R.E.*, 1940, 28, 220-223.
9. L. Rohde: "New Types of Oscillator and Filter Quartz Crystals." *Zeitschrift fur techn. Physik*, 1939, 20, 75-80.
10. A. W. Ziegler: "Wire-Supported Crystals." *Bell Lab. Record*, 1945, 23, 140-144.
11. I. E. Fair: "Using High Crystal Harmonics for Oscillator Control." *Bell Lab. Record*, 1943, 21, 237-242.
12. H. J. Finden: "The Frequency Synthesizer." *Journ. I.E.E.*, Part III, 1943, 90, 165-180.
13. L. Essen and A. C. Gordon-Smith: "The Measurement of Frequencies in the Range 100 Mc/s.-10,000 Mc/s." *Journ. I.E.E.*, Part III, 1945, 92, 291-295.
14. E. Karplus: "Wide Range Tuned Circuits and Oscillators for High Frequencies." *Proc. I.R.E.*, 1945, 33, 426-440.

### APPENDIX

List of Diagrams taken from Published Papers.

- Fig. 3.—Fig. 2 on p. 417 of *Proc. Phys. Soc.*, Vol. 50, 1938.
- Fig. 4.—Fig. 1 on p. 509 of *Proc. Roy. Soc. A.*, Vol. 149, April, 1935.
- Fig. 5.—Fig. 2 on p. 292 of *Journ. I.E.E.*, September, 1934.
- Fig. 6.—Fig. 6 on p. 222 of *Proc. I.R.E.*, 1940, Vol. 28.
- Fig. 7.—Fig. 5 on p. 142 of *Bell Lab. Record*, 1945, Vol. 23.
- Fig. 8.—Fig. 9 on p. 241 of *Bell Lab. Record*, 1943, Vol. 21.
- Fig. 9.—Fig. 3 on p. 168 of *Journ. I.E.E.*, III, 1943, Vol. 90.
- Fig. 10.—Fig. 1 on p. 291 of *Journ. I.E.E.*, III, 1945, Vol. 92.
- Fig. 11.—Fig. 3 on p. 292 of *Journ. I.E.E.*, III, 1945, Vol. 92.
- Fig. 12.—Fig. 4 on p. 293 of *Journ. I.E.E.*, III, 1945, Vol. 92.
- Fig. 13.—Figs. 10 and 11 on p. 430 of *Proc. I.R.E.*, 1945, Vol. 33.

### Side Slip

The figure of 0.000016 quoted by Dr. Essen in Part I of his article which appeared last month should have read 0.0000116, or more accurately 0.00001157. We are indebted to Mr. G. R. Oxlade, BRS4635, for pointing out the error.

### SAFETY IN THE SHACK—(continued from page 181).

15. Where the floor is likely to be damp, a rubber mat, not less than  $\frac{1}{8}$  in. thick, should be placed in front of the transmitter.

16. If it is necessary to touch any part of the transmitter while the power is ON, the operator should use only one hand, keeping the other hand in his pocket or behind his back. Whenever two hands are used to adjust the transmitter, there is a very grave risk of receiving a shock which might paralyse the chest muscles.

17. Receiving equipment and television receivers can also produce fatal shocks and should be treated with the same caution as a transmitter.

\* \* \*

Who will be the next victim of carelessness? You?

# A BATTERY OPERATED V.H.F. RECEIVER

By E. L. CAMERON (BRSS123).\*

THIS article describes a simple and easily constructed receiver designed to cover the range from 56 to 112 Mc/s. It is of a type which will enable the newcomer to familiarise himself with this band of frequencies, and will also serve as a useful stand-by when more ambitious equipment is built to replace it. It is reasonably portable as it is built in two separate units which fit one above the other into a metal case, constructed from the container of an old disused charging set. The first unit, which comprises the detector and first audio amplifier stages, may be used on its own for headphone reception whilst the second carries the second audio amplifier stage and loudspeaker, and is connected to the output of the first unit by means of a flexible cable, plug and jack. A volume control is fitted in both units.

The valves used are a Mazda HL 23 for the detector and first audio stage and a Cossor 220 for the output stage. The total current consumption is .3 amp. at 2 v. and 7 mA at 120 v.

coupling, the condenser being first dismantled and the metal rods replaced with Eddystone insulating pillars. The tuning condenser is a Lissen H.Q. 20  $\mu$ f with two rotors and two stators, modified to  $\frac{1}{2}$  in. spacing. An Eddystone flexible coupling is used to connect the disc drive to the condenser, a  $\frac{1}{2}$  in. ebonite rod being fitted between drive and coupling. The valve holder for the detector valve is stripped of all unwanted contacts and rivets, the top layer of insulating material over the sockets being discarded. The holder is mounted on insulating pillars to bring it level with the tuning condenser and fixed as closely as possible to it. There are only two wires in the tuning circuit, one  $1\frac{1}{2}$  in. long, the other  $\frac{3}{4}$  in. long.

The R.F. choke which is wound on an Eddystone  $\frac{1}{2}$  in. diam. former consists of 25 turns No. 26 gauge enamelled wire. A 50  $\mu$ f ceramic disc condenser is employed in the grid circuit in conjunction with a 5 megohm leak. A Varley "Nictet" transformer, with its casing removed, provides the coupling to the first

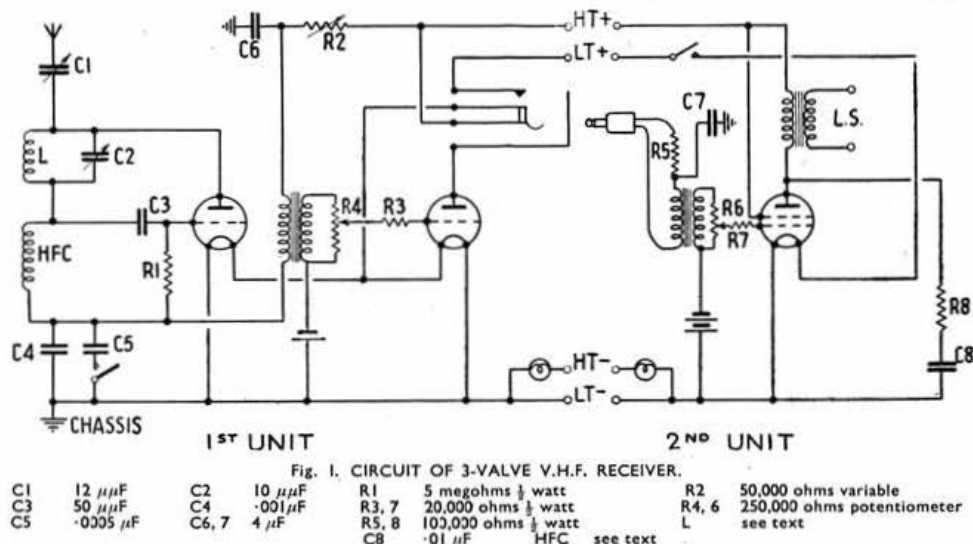


Fig. 1. CIRCUIT OF 3-VALVE V.H.F. RECEIVER.

The panel of the detector unit carries the tuning condenser dial (J.B. disc drive), quench control resistance, volume control, panel light switch and a switch to bring into circuit a .0005  $\mu$ f condenser in parallel with the .001  $\mu$ f quench condensers; this addition is found to be necessary only on the 112 Mc/s. band. The second panel carries the loudspeaker (a Rola 5Z), the volume control and L.T. switch for this unit only.

The  $\frac{1}{2}$ -wave aerial is of the telescopic type and is attached to the side of the receiver by means of two Eddystone  $2\frac{1}{2}$  in. insulated pillars, connection to the receiver being made from the lower pillar, the upper pillar being used merely as a support.

As it was not found possible to include batteries of any normal type in the same casing as the receiver, a separate box was made up and connections taken to the receiver by way of a 4-pin valve base and valve holder. Both units measure 8 in.  $\times$  5 in.  $\times$   $5\frac{1}{2}$  in.

## Construction of First Unit

A J.B. neutralising condenser is used for the aerial

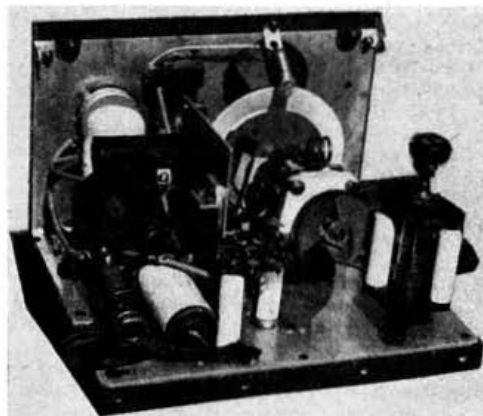


Fig. 2.

View of first unit showing the screening and detector valves removed. The G.B. cell is seen mounted on the small screen over the transformer. The screening of panel and baseboard may also be seen. The jack for headphones and coupling units is on the left.

\* 8, Tavistock Road, Exeter, Devon.

audio stage. This transformer and a 1.5 v. cell for grid bias are fixed to a small screen near the amplifier valve. The cell is taken from a "flat" type torch battery and has a 6BA screw soldered to the brass top cap, and is fixed to the screen by this screw, thus saving a connecting wire and clip. A tag is soldered to the zinc casing of the cell and a wire connects this with the secondary winding of the transformer.

#### Construction of Second Unit

The baseboard is cut away under the cone of the speaker to allow for fitting to the panel. A10,000 ohms resistor and 4  $\mu$ F condenser are employed for decoupling. The primary of the input transformer of the unit is fitted with a flexible cord and plug to facilitate connection to the other unit. A terminal strip is fitted at the rear of this unit and connections made from it to the other unit and to the batteries. Perforated zinc sheeting between speaker and panel acts as a protection for the cone and adds to the appearance of the finished receiver.



Fig. 3.

View of second unit. The plug coupling unit is connected to the two right-hand terminals on the strip; connections to the batteries being made from the remaining four. These also supply current to the first unit.

#### Coils

These are made from No. 14 gauge copper wire, 3 turns  $\frac{1}{2}$  in. diam. spaced 1 in. diam. being used for 112 Mc/s. At the time when this article was written (1945) no amateur signals had been heard on what is now the 58.5 Mc/s. band, but 7 or 8 turns  $\frac{3}{4}$  in. diam. should be about right. The set was required for receiving signals on a frequency between the above bands and has proved very satisfactory.

The coils are easily changed and are mounted in the following manner. As the terminals on the tuning condenser are not used for making connections to other components they were removed. Two pieces of brass rod  $\frac{3}{16}$ ths. diam., and  $\frac{5}{16}$ ths. long have a hole drilled through the centre of each and tapped 6 B.A. A hole is drilled at a point about half-way along each to take No. 14 gauge wire. These are screwed on to the tuning condenser in place of the terminals so that the holes are in a vertical position. The coil is inserted into these holes and secured with a short 6 B.A. screw.

#### Operation

When the units were first operated, considerable trouble was experienced with crackling and rustling noises whenever anything on the receiver was moved or touched. After hours of dismantling and reassembling it was decided to insulate the screening of the first unit from the metal casing. This was carried out and an earth connection made by a single wire to the outer casing. Since then no further trouble has been experienced. The lid of the first unit was originally a press-on fit, but this was altered for the

same reason. Small brass angle pieces were made and attached to the side screens, the lid being secured to these by 4 B.A. screws. Directly above the series aerial condenser a hole was drilled through the lid to enable it to be adjusted by means of an ebonite rod shaped like a screw-driver which engages with a slot cut in the knob of the condenser.

All parts are easily obtained, adapted or constructed from materials available at the present time.

#### British Colonial Prefixes

As the result of suggestions put forward by the Society, the Colonial Office has agreed that the undermentioned prefixes shall be used by amateur radio stations operating in the following territories —

VS9A	and another letter	..	Aden.
VS9K	"	"	..
VS9P	"	"	..
VS9S	"	"	..
			Kamara.
			Perim.
			Socotra.

It is anticipated that the prefixes at present assigned to Straits Settlements and the Federated Malay States will shortly be changed now that Singapore has assumed the status of a Crown Colony and the F.M.S. have become the Malayan Union.

For the information of members serving in Asia we reproduce below the current official list of VS prefixes.

VS1	..	Straits Settlements.
VS2	..	Federated Malay States.
VS3	..	Unfederated Malay States.
VS4	..	Sarawak and North Borneo.
VS5	..	Labuan and Brunei.
VS6	..	Hong Kong.
VS7	..	Ceylon.
VS8	..	Bahrein Island and Khuria Muria Islands.
VS9	..	Aden, Kamara, Perim Island and Socotra.

#### 'Ware Television

Licensed amateurs are reminded that interference may be caused to television receivers unless care is taken to suppress the third harmonic of transmitters operating in the 14.1-14.3 Mc/s. amateur band.

Members who intend to use this band are advised to study the "Transmitter Interference" Chapter in the *Amateur Radio Handbook*, or the articles on harmonic suppression which appeared in pre-war issues of the BULLETIN.

#### Naval Electronic Scrap

Apropos the announcement made in our last issue, the Admiralty have informed the Society that large quantities of naval electronic scrap are likely to be available for at least 18 months.

The Admiralty recommend that a close liaison be established between D.R.'s and Naval Stores Officers commencing if possible with a personal visit from each D.R. to the Naval Store Depot nearest to his District.

The Admiralty state that it is quite impracticable for the Society or its representatives to be supplied with a list of dates on which members can be certain of obtaining surplus equipment at any particular depot. It is understood, however, that during the last three weeks instructions were issued for scrapping vast quantities of material which means that all depots should now be in a position to offer equipment.

For the information of members it should be stated that this scheme was originally drawn up by the Admiralty to assist technical colleges and universities, to acquire much needed equipment, consequently such bodies have, up to now, had first choice, but once their demands have been met, Society members should have no difficulty in obtaining large quantities of equipment. To avoid disappointment it is necessary to state that Avometers, Oscilloscopes and other test gear will not be available at £2 10s. 0d. per cwt.



# THE MONTH ON THE AIR

By A. O. MILNE, G2MI\*

## Band Planning

JUST in case the form of words used in the last paragraph of the May Editorial gives someone a heart attack; it should be explained that the statement that 7,200-7,300 kc/s. will be left clear for U.S. 'phone does not mean that we shall be debarred from using this portion of the band, but merely that the Americans will keep their 'phones within that section and should, therefore, be clear of U.S. CW stations. We shall, of course, still have the use of the whole band, but naturally it will be only reasonable not to use the U.S. 'phone part when Americans are coming through.

Members will be glad to know that the A.R.R.L. Board of Directors has appreciated the wisdom of some of our representations on the subject of band-planning and have made the following recommendations to the F.C.C. On 28 Mc/s. the 'phone band to revert to 28,500 kc/s. On 7 Mc/s. a 'phone band to be allocated to U.S. amateurs from 7,200 to 7,300 kc/s. On 14 Mc/s., however, the story is not quite so happy as the A.R.R.L. has recommended that the U.S. 'phone band be 14,200-14,400 kc/s.

We are trying to get them to alter this to 14,250-14,400 kc/s. because we feel that 14,200 is too low in the band. It will mean that another 100 kc/s. at least will be taken up by non-American 'phones with dire results to the key men. We feel strongly that a 14,200-14,400 kc/s. U.S. 'phone band is a retrograde step which will be extremely unpopular with everyone, not least the U.S. amateurs themselves. Naturally these figures are only in the nature of recommendations by the A.R.R.L. to the F.C.C. and have yet to be approved. We sincerely trust that they will think twice so far as 14 Mc/s. is concerned. With the other recommendations very few will have any quarrel, the 28 Mc/s. recommendation being particularly gratifying.

A.R.R.L. have also asked for the frequencies between 3,850 and 4,000 kc/s. to be a 'phone band. This will not affect us to any appreciable extent. No one, however, will want to see 14 Mc/s.—an international band—given over almost entirely to 'phone, which will be the case if the Americans "appropriate" half of it to themselves for this purpose.

## News of the Month

There is no question that Sunday, May 19, provided the high spot of the month. Indications that something was definitely "up" were given when the 28 Mc/s. band opened for S9 contacts over most of Europe. D's, HB's, F's, SM's, OZ's and the rest. The wily ones forthwith repaired to 60 Mc/s. and were well rewarded for their trouble, as is related by my fellow scribe G2WS in his "Month on Five" contribution.

Saturday, May 25, also provided short-skip contacts on 28 Mc/s. and may have been another good day on 60 Mc/s. Tell us about it.

## General Notes

Here are a few more addresses: ZE1JU, Box 569, Bulawayo; ZE1JJ, Box 591, Bulawayo; ZE1JI, Post Office, Shabani; TG9JK, Jewell Knott, c/o Pan-American Airways, Guatemala City; W8SIR/VP9, A.P.O. 856, c/o Postmaster, N.Y.C. ('phone: 28040); XABL, 13th Div. Signals, British Forces in Greece; XACP, Signals Officer, R.A.F.

Station, Elmas, Sardinia (this station is operated by G8AB and BRS5828).

EQ3W is an American. QSL to Adaman Airport, Persia. ZD4AB's address is T. F. Hall, P.O. Eng. Dept., Gold Coast. YI6JS is J. H. Stanier, Margil, Near Basra, Iraq. EL4S, R. J. Rowan, Fisherman's Lake, Liberia; home QRA, 638, Pallister, Detroit, Mich.

BR59906 has heard UA3KAH, pre-war call UK3AH, Box 88, Moscow. PK2BFO will soon be on the air from Bandoeng, Java, operated by Lieut.-Col. Trewby. XAAZ is now back in England. QSL to 56, Elsie Road, Southtown, Great Yarmouth. G6ZO is also back and would like some information on W2CDJ/L. VU3LR (28,040, T6 chirpy) is operated by Ft./Sgt. Waterston, R.A.F., Palam, New Delhi. Cards for YR5W can go via HB9AG. QTH of VQ4AA is Box 4001, Nairobi, Kenya. ZB2A is genuine. QSL to Sq./Ldr. Butterworth, G8BI, Officers' Mess, R.A.F. Station, New Camp, Gibraltar.

OD2AC is with the Iraq Petroleum Co., Beyrouth, Lebanon. G5HB is now in France and hears many G's on 1.8 Mc/s. between 21.00 and 24.00 B.S.T.

Lieut.-Col. Whatman, recently VS1BC and now in New Delhi, tells us that licences have been issued in Singapore to 1BA, BC, BD, BF, BG, BH and BJ, all of whom are active. QSL to "X" Branch H.Q., ALFSEA.

OK1AA, worked by G2KO and others on 1.8 Mc/s., states that licences have been issued to 18 members of the "underground" to celebrate the first anniversary of the Prague revolution.

Our old friend Doug. Chisholm, G2CX, puts a nice signal over on 28,080 under the call VS7CX. QSL via R.S.G.B. Bureau.

Eric Trebilcock hears the real DX! Here are a few new ones: F08FN, (Bora Bora Island, French Oceania) is W4GSJ; W3AFN, Cebu Island; W2MBC, Samar Island; J5OS, J5LB and W6URY/J5 are all on Okinawa; W5GMB and AK1LO are in Korea; FK8AN is at Noumea, New Caledonia; W1NUX is on Enwetoll Atoll, and W4GMK is on Bikini Atoll—the Atom Bomb Island.

PK4DA is genuine. QSL via R.S.G.B. W2ILE on Palmyra is H. Beecher, C.R.M. Navy, 309 F.P.O., c/o Postmaster, San Francisco. G2FAG is carrying on the G6ZO/I station as XAZO. 6ZO/I has QSL'd 100 per cent. If you have not had your card, send in some envelopes!

G2WD has produced QSL proof of a 'phone contact with ZL4GM way back on November 18, 1938. Alas for G2DP! WD's QSO was on 14 Mc/s., however, and we now have G5IN with a 28 Mc/s. 'phone contact with ZL3KZ on April 3, 1946. Any further claimants?

ZP2AC is active on 28,080. OQ5BL is Box 201, Jabotsville, Belgian Congo. ARLA, L.A.C. Baer, 775831, No. 4 Forces Broadcasting Unit, Beirut, M.E.F., would like to hear from an amateur in the Melton Mowbray area.

VQ4MNS, 28,150, is operated by Maj. Miles Salmon, G8MH, R.E.M.E., Box 4000, Nairobi.

We must apologise for a slip last month. YI2XG is operated by Ft./Lt. Coombes, G2FON, not G5CW.

G6CU/ZC2 asks that anyone who has not yet had a card and has envelopes with the Bureau please drop him a line because two pages of his log have been lost, involving about 60 contacts, about one-third of them G's.

# THE MONTH ON FIVE

By W. A. SCARR, M.A. (G2WS)\*

**W**ITH so much activity on this band and new records being set up every month, the difficulty of compiling these notes will lie in the selection of material. Let it be said at the start that more is aimed at than a mere cataloguing of DX achievements—important as this information is on the V.H.F. bands. Notes on conditions, regular observations and special experiments will be particularly welcomed.

The present column, however, must assuredly be a record of DX, for after many weeks of fine achievement within the country, the continent has at last been contacted. G5MQ (Liverpool) worked I1IRA (Navarro, N. Italy) on May 19, signals being S8 both ways with the Italian station using ICW. Half-an-hour later 5MQ worked F3JB, the French station later being heard working G5BY (Devon). 5 MQ's log of recent DX contacts also includes GW6OK (Colwyn Bay), 6VX (Hayes), 6CW (Nottingham), 8JV (Nottingham), 6SL (Birmingham), 2NH (Kingston, Surrey), 5MA (Ashstead, Surrey), and 5BY (Devon).

G6CW (Nottingham), who gave many London stations their first post-war DX QSO, reports many new contacts, including 6LK and 8OS. He is of opinion that if stations would use really efficient aeriels and receivers, contacts up to 160 miles would be possible at all times.

G2XC (Portsmouth) contacted I1FA (Milan) Q5S9 with QSB to S2 at 17.40 B.S.T. on June 4 and followed this up 20 minutes later by working F3JB (Cote D'Azur) Q5R7. Both contacts were on telephony using a 3 element rotary beam only 10 ft. high.

G5LL and G5BD, both of Mablethorpe, are seeking QSO's but have not had much luck so far (keep it up, OM's). They have, however, heard several Italian stations on 'phone and identified one call as I1AY.

## News from The U.S.

The General Secretary (G6CL) has received a letter from Ed. Tilton (W1HDQ), V.H.F. Editor of A.R.R.L., in reply to a request for schedules for possible trans-Atlantic work on 50 and 58.5 Mc/s. He reports great interest in these frequencies in the States and promises co-operation. In his opinion, regular schedules would be a waste of time as contacts are only likely to be achieved during periods of intense E-layer ionisation. He recommends that conditions on 28 Mc/s. should be taken as an indicator and that when signals on that band are coming through well from distances of 400 miles or less, attempt should be made to establish contacts on 50 and 58.5 Mc/s. "by multi-hop propagation via sporadic-E." He thinks that June and July are the most promising months for such an achievement. One must observe, in passing, that the possibility of such contacts would be greatly increased if both sides were authorised to use the same frequency channel.

## F.M.

An interesting report comes from Mr. D. N. Corfield, G5CD (Hendon), who gives details of experiments he is conducting with G5RD on frequency modulation on the band. The freedom from car QRM is a great blessing in using this system. Anyone who would like to co-operate in the tests should write to 5CD,

at 10, Holders Hill Gardens, Hendon, London, N.W.4.

## Stop Press

HB9G reports hearing G5BY at S9 on May 19 whilst in QSO with I1AY. Reception took place for two periods of about one minute duration and signal strength was the same on both vertical and horizontal aeriels. HB9G was using a super regenerative receiver.

SUIKE calls for 15 minutes every day from 17.00–17.15 G.M.T. and listens for replies on 28 Mc/s. Reception of his signals has been confirmed from France.

GI6TK is calling on schedule at 20.30 G.M.T. on Sundays, Tuesdays and Saturdays, frequency 58,560 kc/s. and aerial beamed on London.

## QSL Bureau

**T**HE Bureau is now in full operation thanks to the stout-hearted efforts of our team of sub-managers. On behalf of all users of the Bureau we extend the warmest thanks and appreciation to the following members who are performing this most valuable and onerous service: BRS3405, 5269, 5935, G2BBI, G2HCZ, G2UV, G2VK, G6QM, G8RN, GW2UH, GI5HV and GM6MD. Please do not send envelopes or cards to these gentlemen direct. They have quite enough to do as it is. Members in England and Wales should send all cards and envelopes to R.S.G.B., QSL Bureau, 23, Kechill Gardens, Hayes, Bromley, Kent. Members in Northern Ireland can send envelopes only direct to Mr. W. H. Martin, GI5HV, Greenisland Lodge, Greenisland, Co. Antrim, whilst those in Scotland can send envelopes only to Mr. D. Macadie, GM6MD, 154, Kingsacre Road, Glasgow, S.4.

The Bureau can now handle cards addressed to the following additional prefixes: EI, F, HB, I, LU, LX, ON, PA, VK, VQ4 and ZS.

## When Using the Service

Please write your call sign clearly in the top left-hand corner of your envelopes, and don't forget to fill in your name and address. Don't send ordinary sized envelopes unless you don't mind having your cards folded. Don't put more than a 2½d. stamp on your envelope. As "despatch when 3 cards are waiting" is an inflexible rule, you are only wasting money by over-stamping envelopes.

It would help a great deal if members would sort their cards into G2, G3, G4, etc., and the other prefixes (W, VE, etc.) likewise. Please use your noddles and help us all you can!

## Important Note

The QSL Manager will be away on holiday from June 22 until July 8. Do not send in any cards or envelopes during this period as the occupants of his house will have no means of disposing of them or of discerning between QSL mail and private correspondence to be forwarded. A. O. M.

## The New Bands

For the information of those who failed to see the notice in our last issue the following frequencies are to be released as from 0001 B.S.T. June 30, 1946:—  
7150 to 7300 kc/s. 14100 to 14300 kc/s.

\* 8 Beckenham Grove, Shortlands, Kent.

## WEST LONDON DISTRICT MEETING

BY "OLD TIMER"

"WELL, well, fancy seeing you after all this time." "Let's see, it must have been before the war when we last met." "Are you on the air?" "Where are you living these days?" These were some of the remarks overheard during the getting-to-know-each-other session preceding the meeting at the "Red Cow," Hammer-smith, on April 27. The newer member, who had not previously experienced such a gathering, must have felt somewhat out of place but soon showed he was capable of entering into the spirit of it all.

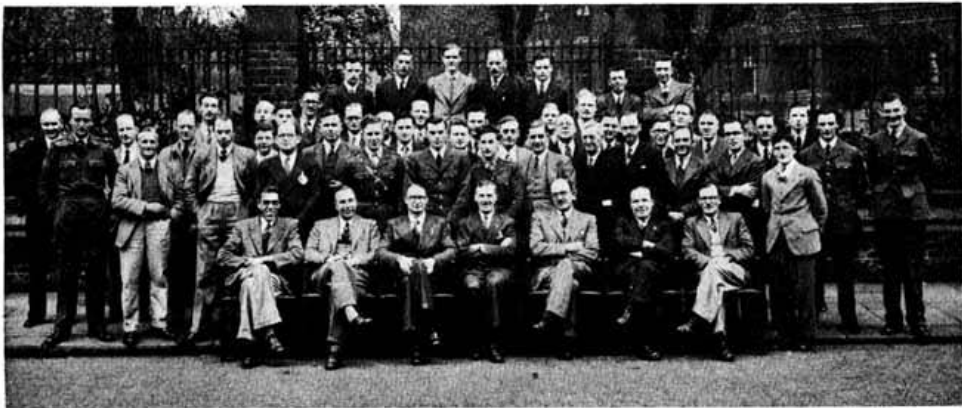
District 15 were holding their first official business meeting, which was probably the first of its kind ever to be held within the London Area. It has usually been the privilege of the Provinces to meet the General Secretary and representatives of Council but, this year it was wisely decided that London too should be included in the plan.

several members had not yet had their apparatus returned by the G.P.O. He suggested that complaints should be sent to the D.R. who would forward them to H.Q. who in turn would press the G.P.O. for its immediate return. (This has now been done.—J.C.)

The D.R. in closing the meeting called for a hearty vote of thanks to those who had come along to enlighten us all.

Among those present were Mr. P. C. G. Bradley, G8KZ (representing the Council), Mr. W. H. Allen, M.B.E., G2UJ (District 16 Representative), and Mr. S. Howard, G8TY (District 12 Deputy Representative).

At the conclusion of the meeting, everyone gathered for the group photograph, which was taken by Mr. Alan Smith, G6VP. Apart from being a keen amateur, Mr. Smith is a professional photographer. Half-



WEST LONDON MEETING, April 28, 1946

Seated: F. Charman, G6CJ, S. Howard, G8TY, A. J. H. Watson, G2YD, H. V. Wilkins, G6WN, John Clarricoats, G6CL, C. G. Bradley, G8KZ, and W. H. Allen, G2UJ.

Photo by Alan Smith, G6VP, 12 Ferrers Avenue, West-Drayton, Middlesex.

In introducing Mr. Clarricoats, the D.R., Mr. H. V. Wilkins, G6WN, explained that the meeting had been arranged to enable members to learn at first hand what the Society had been doing in the past and to hear of their future plans.

Fortified with only a little "Aqua Pura" and what has now become his famous "Little Black Book" the Secretary held the attention of his audience for 90 minutes. His deliberations were on a parallel with those of the Birmingham meeting. He emphasised the importance of members using their votes in every election sponsored by the Society, and asked everyone in the District to take part in the elections of Town and County Representatives when the scheme is introduced later in the year.

On the question of licences several "intelligent guesses" were made but as these have now appeared in print no reference need be made to them here. The speaker referred to the "stop-gap" QSL service and to the new Headquarters' station which will ultimately use a very fine transmitter donated by a radio firm located in the District. So well did he cover his ground that there were very few questions when they were invited later.

Our Hon. Treasurer, Mr. Watson, discoursed upon the resources of the Society and offered to deal with any questions which members might wish to ask. As the finances are in such a good state everyone seemed satisfied.

It was with surprise that the Secretary learnt that

plate copies, on stout paper, can be obtained by sending the D.R. a Postal Order for 2s.

The afternoon was completed with a buffet tea and a general rag-chew. It was well into the evening when the writer left, still leaving many members "telling the tale" over pints.

## R.S.G.B. Slow Morse Transmissions

Schedule effective immediately:—

Mondays	21.30 B.S.T.	..	G2CPF, G2BJY, G6GD.
Wednesdays	21.30	..	G2CPF, G3LP, G6GD, GW3GL.
Saturdays	21.30	..	G2BJY, G6GD.
Sundays	09.00	..	G3LP, G3JK.
	10.30	..	G5UM.
	11.30	..	GW3GL.

FREQUENCIES:—

G2CPF (Yorks.)	..	1,892 kc/s.
G2BJY (Staffs.)	..	1,930 "
G3JK (Notts.)	..	1,865 "
G3LP (Glos.)	..	1,865 "
G5UM (Herts.)	..	1,900 "
G6GD (Ches.)	..	1,885 "
GW3GL (N. Wales)	..	1,965 "

B.R.S. members who make use of this service are requested to advise the organiser, Mr. D. Rock, G8PR, "Sandhurst," Vicarage Road, Amblecote, Stourbridge, Worcs.

Further offers of co-operation from licenced amateurs will be appreciated.

## "BRIDGEHEAD" P.D.M.

By "INCONNU."

**N**ORTHERN IRELAND . . . the Atlantic bridgehead of the war years . . . had its first P.D.M. on Saturday, May 18. The GI's, being "overseas" geographically, have not the same opportunities of attending Society functions as have provincial G's, and during the war the rigid restrictions on travel, and censorship of letters, increased the remoteness . . . which is more psychological than real.

Though fully in the war effort, and, as Mr. Churchill has pointed out, forming a strategic outpost of vital importance for the defence of Great Britain, we had for security reasons to accept restrictions on all forms of communication, and not merely on amateur radio alone. Now that we have been "liberated" from almost all restrictions on inter-communication with our friends in Great Britain, it was a happy thought

—you are right—Clarry spoke. The writer did not time him, and cannot say whether the General Secretary can "fill each hour with 90 crowded minutes"; sufficient to say that it was not a second too long, and was a masterly survey of the Society's position before, during, and at the end of the war, and a very hopeful but sensible outlook on future developments. Clarry knew that the GI's had not been in very close touch with Society matters and activities during the war years, for reasons already stated. He therefore had a long and detailed story to tell: he did it well, and we are grateful, as the burst of sustained applause at the finish gave proof.

G2MI then spoke about THE BULLETIN, and the "Month on the Air" in particular. He gave the latest details about the QSL bureau situation and arrangements.



NORTHERN IRELAND P.D.M. BELFAST, MAY 18, 1946.  
Front row seated, G15UR, G2IG, 6CL, 6LJ, 6GR, G16YW, G15QX, G2MI, G16TK.

which brought the President, three members of Council, and the General Secretary ("Clarry" to you), to meet us in fellowship, discussion and celebration.

Vice-President, Stan. Lewer, G6LJ, and Hon. Editor, Arthur Milne, G2MI, arrived via Heysham steamer on Saturday morning. The remainder of the H.Q. party emphasised the magic carpet quality of air travel by leaving London after breakfast on Saturday and landing at Sydenham airport, Belfast, in a little over two hours, having had a comfortable journey. The plane carried the President, General Secretary and Mr. R. H. Hammans, G2IG.

### Business Meeting

The P.D.M. opened at 2.30 p.m. in the Presbyterian War Memorial Hostel; the District Representative, Mr. J. N. Smith, G15QX, conveyed a warm welcome to our guests and visitors. In addition to the H.Q. party, he heartily welcomed our friends from Southern Ireland, who had travelled north to see us again. The EI party consisted of Mr. Coombs, EI9J; Capt. Woods, EI3L; Dr. F. Whyte, EI8G; and Mr. Jackson, EI8L. The D.R. also welcomed Capt. Varney, G5RV, and Sgt. Bott, G5VB, who kindly brought some apparatus and, later, demonstrated it.

On the invitation of the D.R., the President took the chair, and expressed his pleasure, and the pleasure of the H.Q. party, at being able to visit GI. He called upon the General Secretary to make his oration, and

G6LJ addressed the meeting and spoke of the gratitude of the Society to its H.Q. staff for their stout-hearted work during the trying times in London.

Tea was next on the agenda, and many appreciative comments were made about the way the Hostel management had prepared for us: not often in these days does one see so much care taken with the table appointments, or such an attractive meal.

### Technical Talk plus Variety

After tea, Capt. Varney, G5RV, gave a most interesting and practical talk on the V.F.O. The supply, being D.C., prevented a working demonstration of the apparatus which G5VB kindly brought along to illustrate G5RV's talk, but it was closely examined and admired.

A number of contributions from local radio dealers were the prizes in a "swindle": the only YL present, Miss Williamson, an A.T.S. officer, consented to draw the numbers. Mr. Beat, ex-GI2BB, followed with a short and amusing conjuring act, to add variety to the programme.

### Round and About

On the morning of Sunday, May 19, the visitors from G and EI visited the stations of G16TK and G15SJ. After lunch, the EI group paid a short visit to G15DX before leaving for home. The H.Q. party,



attended by GI5QX (D.R.), GI5UR (T.R.), GI5SJ, GI3ML, GI2DGU, GI6TK, and GI6YW, left in three cars and a motor cycle combination for a tour of County Down.

The Cathedral Church of Down, at Downpatrick, was visited, and here the party saw the stone which, tradition has it, marks the grave of Saint Patrick.

The next stop was at the coast, the strand at Tyrella. Here, at last, the visitors saw the Mountains of Mourne across Dundrum Bay, and satisfied themselves that they really did "roll down to the sea." One visitor appeared to be absorbed in poetic contemplation, but in a quiet voice, shattered the bystanders with: "Yes, the 'roll' is exponential and asymptotic."

Passing through Killough, a brief call was made at the little fishing port of Ardglass, and then back to "rendezvous" at Downpatrick with the other section who had visited the recent wreck of an American troopship. The combined party, speeded by the thought of tea, turned north and arrived at Island Mahee, on Strangford Lough. Here we had tea, and spent a few minutes looking at the old round tower and ruins of Nendrum Abbey before turning for home.

The D.R. entertained our G friends in the evening, and G2IG made a successful late night journey into the country to locate an old friend, and experienced a police check on the return trip, when his guide's car was searched, unsuccessfully, for rationed goods.

This was the conclusion of a most enjoyable time for the GI's, as the air-borne section left early next morning for London, while the sea-borne two had a few extra hours to spend with GI friends before catching the night boat.

### TORQUAY TAKES ON A P.D.M.

The members present at the very successful P.D.M. held on Sunday, May 26th, 1946, at the Strathmore Hotel, Torquay, were glad to welcome their President (Mr. E. L. Gardiner, G6GR), and two members of Council, Mr. C. H. L. Edwards (G8TL) and Mr. C. G. Bradley (G8KZ). The somewhat small attendance (about thirty), and the decidedly bad weather (which made it impossible to take any photographs), were the only two things which detracted from an otherwise most interesting meeting.

The interval until lunch time was spent renewing old friendships, and in inspecting some excellent Stratton components, which together with a model of the new 504 Eddystone receiver were brought along by our old friend, Mr. "Jerry" Walker, G5JU.

The proceedings at the informal meeting were opened by the D.R. (Mr. W. B. Sydenham, G5SY), who welcomed the President, and members of Council, and thanked those who had supported the event in spite of the weather. He outlined the future aims of the District and asked members to exercise patience with regard to the allocation of frequencies and other transmitting facilities, and to the acquisition of Admiralty material.

The President then took the chair, and addressed the meeting. He explained the reason for the presence of Council members, and said that the Council was attempting this year to send representatives to attend P.D.M.'s in all Districts. He proceeded to explain the projected system of control and representation, and stressed the fact that all members should exercise their voting rights in the forthcoming T.R. and C.R. elections. He outlined possible developments with regard to frequencies and explained the progress which had been made in the QSL service, showing how members could help to put that service on a firm foundation.

The President was followed by Mr. Edwards, who

was able to offer valuable information about the Admiralty disposals scheme. He agreed with many others that it would have been better had the notice in THE BULLETIN been held back for a month. (The D.R. mentioned in passing that he had been inundated with applications, but nothing can yet be done).

After a free discussion in which many matters were raised, the assembly adjourned for tea. This was followed by a "swindle," on pre-war lines, for a number of Eddystone components kindly brought by G5JU, and for which we thank his company most sincerely.

The D.R. in his final speech recorded his appreciations to all who had helped, and were helping, in the development of the District, and especially the T.R.'s who were present, G5QA, of Exeter, and G2JL, of Penzance. He had a special word of sincere thanks for G2GK, the T.R. for Torquay, who had assisted so much in the organisation of the meeting.

At the conclusion of the formal business the party broke up into small groups which appeared to spend the next few hours running between the station of the D.R., G5SY, and that of G2BMZ. Those at the latter station were able to enjoy a sort of "mass" contact with G5BY on five metres.

At a distinctly late hour the D.R. was glad to retire to bed!

"ESSWYE"

### Radio Model Control Group

The Group Manager, F/Lt. J. O. Dykes, G2AIJ, "Sunnybank," Llanthony, Nr. Abergavenny, Mon., apologises for the absence of notes in recent issues and for his failure to reply promptly to all correspondence, but this has been due to pressure of Service duties.

The Group is flourishing and new members are joining at a steady rate. Many letters of appreciation were received after the issue of the first two letter budgets, but the third issue is held up for lack of material. Items for inclusion in this issue should be forwarded direct to F/Lt. Dykes.

Members who are using the control frequency of 460.5 Mc/s are reminded that they must notify the Radio Branch W2/6 G.P.O., London, E.C.1, quoting the reference 16311/46. No special licences are issued for the use of this frequency.

### New Licences

We understand that the first batch of application forms for post-war licences was despatched from the G.P.O. on June 11, 1946. The new calls when issued will be in the series G3, followed by three letters.

### MID-EAST PROVINCIAL DISTRICT MEETING

to be held on

SUNDAY, JULY 7th, 1946

at:

CAFE REGENT, HIGH ST., MABLETHORPE

#### PROGRAMME:

Assemble	...	...	...	2 p.m.
Business Meeting	...	...	...	2.30 p.m.
Talk by Mr. H. A. M. Clark (G6OT)	...	...	...	3.15 p.m.
Tea	...	...	...	4.45 p.m.
Informal Discussions	...	...	...	5.30 onwards

Approximate Charge, 3/-

Reservations for above and for lunch (extra) to Mr. A. C. Simons, G5BD, The Elms, Church Road, Mablethorpe. If the weather is favourable the meeting will be held on the lawn of G5BD's residence. Directions in this case from Cafe Regent.

## FORTHCOMING EVENTS

- June 16 District 12 (Enfield), 3 p.m. at A. & B. Cafe, junction of Southbury and Ladysmith Roads, close to Savoy Cinema. Buses 107, 144, 135 and 310 pass the door.
- June 17 District 18 (Hull), 7.30 p.m. at 30 Princes Avenue.
- June 18 District 14 (Southend), 7.30 p.m. at 52 Priory Avenue.
- June 18 District 14 (Chingford), 7.30 p.m. at Temperance Cafe, Main Road, South Chingford (near Royston Arms).
- June 19 Scotland "C" Area, 7.30 p.m. in Room 7, Y.M.C.A., Dundee.
- June 19 District 6 (Exeter), 6.30 p.m. at Y.M.C.A. Talk by G3MU, on modulators.
- June 20 District 6 (Falmouth).
- June 20 District 12 (St. Albans), Monthly Dinner, 7 p.m. at Jack's Cafe, Verulam Road.
- June 21 District 14 (Grays), 8 p.m. at Bairds Cafe, Orsett Road.
- June 21 District 14 (Chelmsford), 7.30 p.m. at 184 Moulsham Street.
- June 22 District 6 (Torquay), 6.30 p.m. at Y.M.C.A.
- June 22 District 18 (Hull), 7.30 p.m. at 30 Princes Avenue.
- June 22 District 15 (Staines), 7.30 p.m. at The Pack Horse Hotel, Thames Street, Staines. Talk by G6WN.
- June 23 District 15 (West London), 5.30 p.m. at 51 Rustall Avenue, Bedford Park, Chiswick, W.4.
- June 23 District 15 (Twickenham), 6 p.m. at G2VV, 84 High Street, Hampton.
- June 23 Scotland "G" Area, 2.45 p.m. at GM2IA, Mount Street, Michael, Duns, Berwickshire.
- June 25 District 1 (Manchester & District), 7 p.m. at the Reynolds Hall, College of Technology, Sackville Street.
- June 26 District 2 (Sheffield), 8 p.m. at the "Dog and Partridge," Trippet Lane. Demonstration by Mr. E. Stubbs of a home-built Oscilloscope.
- June 26 Scotland "A" Area, 7 p.m. in the Institute of Engineers and Shipbuilders, 39 Elmbank Crescent, Glasgow.
- June 27 District 15 (Ruislip), 7 p.m. at 11A Ickenham Road.
- June 27 Scotland "F" Area, 7.30 p.m. in the Plough Hotel, Stenhousemuir.
- June 27 Scotland "D" Area, 7.30 p.m. at 25 Charlotte Square, Edinburgh. GM6UU "Starts You Talking."
- June 28 District 5 (Bristol), 7 p.m., at Keen's Cafe, Park Row.
- June 29 District 1 (Liverpool & District), 2.30 p.m. at the Stork Hotel.
- June 29 District 7 (Reading), 6.30 p.m., Palmer Hall, West Street. "Cocos Island," by G6CU/ZCZ.
- June 30 District 7 (Guildford), 3 p.m., the Cafe, The Cinema, Woodbridge Road.
- June 30 **DISTRICT 14 (SOUTH WEST AREA), P.D.M.** (see separate announcement).
- July 3 District 6 (Penzance), at Dolphin Hotel, The Quay.
- July 3 District 15 (Hayes), 7 p.m. at the Labour Hall, Uxbridge Road, Southall.
- July 5 District 12 (North London), 7.30 p.m. at Merryhills Hotel, Bramley Road, Enfield West (near Enfield West Tube Station, 107 bus passes the door).
- July 5 District 15 (Hounslow), 7 p.m. at The Scouts Hall, Sutton Estate, Great West Road (30 yards east of Vicarage Farm Road).
- July 5 District 14 (Grays), 8 p.m. at Bairds Cafe, Orsett Road.
- July 6 District 16, 3.30 p.m. at GSCP, The Rectory, Newhaven.
- July 7 **DISTRICT 17, P.D.M.** (see separate announcement).
- July 10 District 1 (Liverpool & District), 7 p.m. at the Stork Hotel.
- July 12 District 15 (Harrow), 7 p.m. at 153 Belmont Rd.
- July 13 **DISTRICT 7, P.D.M.**, 12.15 p.m., Kimbell's Cafe, Osborne Road, Southsea (see separate announcement).
- July 13 District 7 (Reading), 6.30 p.m., Palmer Hall, West Street.
- July 16 District 3 (Birmingham), 6.30 p.m. at Chamber of Commerce, New Street.
- July 19 District 14 (Grays), 8 p.m. at Bairds Cafe, Orsett Road.
- July 21 **DISTRICT 14 (SOUTHEND), P.D.M.** (see separate announcement).
- July 21 District 15. Visit to G4NT, followed by tour of Messrs. Ernest Turner Electrical Instruments Ltd., Chiltern Works, Tottenham Avenue, High Wycombe, Bucks. Assemble works at 2.15 p.m. (Train to High Wycombe or Green Line Coach, alight at Cricket Ground). Prior notification of attendance to C. M. Freer, 37 Melbourne Road, High Wycombe, will be helpful for catering.

*A cordial invitation is extended to Society members to attend any of the above meetings*

EAST LONDON AND SOUTH WEST ESSEX  
PROVINCIAL DISTRICT MEETING

to be held at

LAMBOURNE ROOM, Ilford Town Hall,  
(OAKFIELD ROAD, HIGH ROAD)

SUNDAY, JUNE 30, 1946

## PROGRAMME:

Assemble ... .. 2.30 p.m.

Business Meeting ... .. 3 p.m.

(The President, Council Members and  
General Secretary will be in attendance.)

Buffet Tea ... .. 5.30 p.m.

Lecture by Mr. H. A. M. Clark, B.Sc.(Eng.),  
A.M.I.E.E., G6OT ... .. 6.30 p.m.

Inclusive Charge, 3/6 per head

Accommodation restricted to 200. Tickets from: Mr. W. H. Matthews (G2CD), 7 Beddington Road, Seven Kings, Essex; Mr. L. J. Fuller (G6LB), 85 High Street, Chelmsford; local scribes or social committee members. Reservations with cash not later than June 25. No Tickets at the Door.

EAST LONDON AND ESSEX  
PROVINCIAL DISTRICT MEETING

to be held at

GARON'S RESTAURANT, HIGH STREET,  
SOUTHEND-ON-SEA

SUNDAY, JULY 21, 1946

## PROGRAMME:

Assemble ... .. 12 noon

Luncheon (ladies specially invited) ... .. 1 p.m.

Business meeting for members only with  
address by G2MI, supported by other Council  
Members ... .. 2.30 p.m.

Tea, followed by station visits ... .. 5 p.m.

Inclusive Charge, 5/6

Reservations with cash to Mr. L. J. Fuller, 85 High Street, Chelmsford, not later than July 16.

## PAØIDW

● Dick Wijkman, PAØIDW, wishes to be remembered to all his friends in Great Britain, and hopes to be able to contact them again in the near future. PAØIDW had the unfortunate experience of hearing the contents of his station being divided among some Huns who were looking for him to be taken to a forced labour camp. He was in hiding in his attic for 14 hours while his wife was under close arrest downstairs. On the liberation of the town by the Canadians some of the stolen gear was recovered.

## Kilocycles to Metres

A further supply of these very useful conversion tables in booklet form has now been obtained and copies are available from Headquarters, price 1s. 3d. each post free.

## OUR FRONT COVER

NOTHING much of real experimental work in radio can be accomplished without accurate measurement. The Model 7 Universal AvoMeter is a 50-range B.S. first-grade combination measuring instrument giving direct readings of A.C. and D.C. Voltage, A.C. and D.C. current, Resistance and Capacity. Audio-frequency power output and Power Level readings are also provided for. It is but one of the comprehensive range of "AVO" high-grade electrical measuring instruments—a range which includes something to meet the needs of every amateur, service engineer and serious experimenter. Fuller particulars obtainable from The Automatic Coil Winder & Electrical Equipment Co., Ltd., Winder House, Douglas Street, S.W.1.

# Letters to the Editor

## The 1.8 Mc/s Band

DEAR SIR,—I was interested to read Wallace Wincombe's letter in the May issue about the use of 1.8 Mc/s. and as another old-time user of the top band I should like to offer my comments.

I do not think Mr. Wincombe's quiet period for communications would work very well, and your editorial suggestion, to divide the band into phone and telegraphy channels, is I think preferable.

The present situation is that the lower 100 kc/s. channel is full of CW signals particularly after dark, whereas the upper 100 kc/s. channel is practically empty. I would suggest that the lower 95 kc/s. be reserved for CW and the upper 95 kc/s. for telephony carefully avoiding the danger spot around 1900 kc/s.

Certainly, 'phone stations with crystals in the lower frequency portion might object to this proposition. That would afford an excellent opportunity for inter-district co-operation in the exchanging of crystals between members who want to get into the appropriate phone or CW band.

A sentence in your leading article in the May issue gives the answer, where you say "the G.P.O. regard the division of our bands as a matter for the amateurs to agree for themselves." On this question of dividing 1.8 Mc/s. now is our chance to show that we can exercise a little self discipline in our affairs.

Yours faithfully,

JACH HUM (G5UM).

DEAR SIR,—Would it not be possible to operate 'phone on alternate days or weeks in preference to dividing the band for phone and telegraphy operation?

Your faithfully,

B. PASHLEY, (G6PJ).

DEAR SIR,—The problem of 'phone QRM on the 1.8 Mc/s. band has been a controversial point amongst the Chingford section of District 14 during the past few weeks. Being primarily responsible for bringing the matter to a head, members may be interested to hear that during the past month a voluntary ban on 'phone has been imposed for one night each week, e.g. the first Monday of the month, the second Tuesday, etc. No restrictions have been suggested over week-ends, as it is appreciated that many stations are unable to work during the week. The reason for "staggering" the off-periods will be equally obvious.

The suggestion made by G6ZH is, of course, on the same lines, but would hardly meet the case of the man who is precluded from working during most daylight periods, and has little opportunity or desire to operate during the small hours.

The alternative suggestion of having 'phone and telegraphy channels will not entirely solve the problem of local QRM where station concentration is high, e.g. in the London area. Owing to present conditions of short supply, many of us are using receivers of somewhat ancient vintage. Even one local 'phone station can play havoc with the band. So-called "communication" receivers are not within the range of everybody's pocket. Certainly few of our younger members making their debut can afford upwards of forty or fifty pounds on a receiver of split kilocycle selectivity.

My personal view, not necessarily shared by all in this area, is a country-wide voluntary ban on 'phone based on the experiment started in Chingford. In any case, why not give it a trial for one month and review in the light of experience?

Yours faithfully,

ERIC JOHNSON (G2HR).

## Band Planning

DEAR SIR,—I think the band planning arrangement you have suggested is very good, but I would like to recommend that all G's try to conform to the following channels for C.W. and phone work:—7,000 kc/s. to 7,150 kc/s. C.W. only; 7,150 kc/s. to 7,300 kc/s. 'phone only; 14,000 kc/s. to 14,200 kc/s. C.W. only; 14,200 kc/s. to 14,400 kc/s. 'phone only.

By adopting this arrangement we should do away with much of the C.W. versus 'phone argument whilst the newcomer would know which crystal frequencies to choose. The above plan assumes that the A.R.R.L. will follow out your Editorial suggestion.

I really do think that when we get our full bands back, we should mutually agree as far as possible to operate in definite C.W. and 'phone channels.

Yours faithfully,

ASHTON N. HARRIS (G6NG).

DEAR SIR,—With reference to your editorial in the May issue, your invitation for comment prompts me to forward to you my own particular views because I know from conversations I have had recently with other amateurs, that I am not alone in thinking the way I do.

It seems rather unfortunate that the opening paragraph assumes that in view of the resumption of amateur activity on the DX bands in a matter of days, it is time for careful planning. This planning should have been carried out when amateur activity was at a standstill during the War and just afterwards and hasty suggestions made now can have little effect upon the scores of stations coming on the air every week and it is a pity that the opportunity has been missed. However, it remains to be seen what can be done now to ensure harmonious working as between telephony and telegraphy stations.

An example of what is likely to happen can be easily obtained by listening over the new 1.8 Mc/s. band during the week end. The major part of this band is rapidly becoming ploughed up with telephony transmissions which will make C.W. operation more and more difficult as times goes on and more and more stations begin to operate on telephony.

Again, on the 28 Mc/s. band, telephony operation by G stations in the I.F. portion of the band, has created a considerable amount of interference in this locality. As an example, two well-known Cambridge stations were working one another for nearly two hours on a recent Sunday afternoon while C.W. DX was coming through, and creating appalling interference in this district. In my opinion, telephony operation by G stations should be restricted to frequencies at least 100 kc/s. from the I.F. end of the band in the same way as the U.S.A. restriction operates.

This sort of thing is going to be worse than ever on 7 and 14 Mc/s. and I consider that if we are proposing to ask U.S.A. amateurs to limit telephony operation to certain bands of frequencies, we should be prepared to do the same. To make the suggestion without this proviso seems to me to be inviting the kind of rebuke that may follow. The number of stations using telephony in this country is rapidly increasing and it seems more than ever necessary to have some portion of both 7 and 14 Mc/s. reserved exclusively for C.W. use.

I am aware from the remarks appearing in the BULLETIN that the Society has already formulated its policy with reference to any possible restriction of telephony to bands of frequencies as far as operation in this country is concerned and I am also fully conscious of the fact that what I say can have little effect or influence on the decisions of the Council, however, you invited comment, here it is.

Yours faithfully,

L. F. PARKER (G5LP).

[Our correspondent seems to have forgotten that practical band planning only becomes possible when band widths are known. Even now we have only obtained the release of half of the 7 and 14 Mc/s. bands. The suggestions put forward in our last issue were not "hasty" but carefully thought out.—Ed.]

## First Class Operator's Club

SIR,—As an "old timer" back on the air again since our licences were re-issued, one thing is very clear to me—unless the operating ability and technique used by the amateur is First Class, we are going to find very soon that the pleasure of operating will be lost.

It seems to me that now is a most opportune moment to initiate a modern "First Class Operators' Club." To be nominated a member of such a Club should be the aim of every true amateur.

I would suggest that the aims and objects of the Club and qualifications required of applicants for membership, be drawn up by Council and a nucleus of Founder Members be proposed by them in order to start the Club.

Perhaps a preliminary discussion in the columns of the BULLETIN would be a good thing and this letter is written with the object of inviting comments and suggestions from members of the Society.

I should be glad to contribute my own ideas on the subject if you would care to have them.

Yours sincerely,

R. L. VARNEY (G5RV).

## Held Over

Due to pressure on our limited space a number of letters to the Editor have been held over from this issue.

## SOUTHERN PROVINCIAL DISTRICT MEETING

to be held at

KIMBELL'S CAFE, OSBORNE ROAD, SOUTHSEA

on

SATURDAY, JULY 13th, 1946

### PROGRAMME:

Assemble ...	...	12.15 p.m.
Lunch ...	...	1 p.m.
Business Meeting ...	...	2.15 p.m.
Tea ...	...	4.30 p.m.
Demonstration and Lecture by Mr. F. Charman (G6CJ) ...	...	5.30 p.m.

Inclusive Charge, 7/6

(If accommodation is available a limited number of reservations for the meeting, tea and demonstration will be accepted. Charge 2/6.)

Reservations to Mr. J. Stephens, G8WC, 65 Ebery Grove, Copnor, Portsmouth, by not later than July 6, 1946.



## HEADQUARTERS CALLING

## COUNCIL 1946

## President:

ERNEST LETT GARDINER, B.Sc., G6GR.

Executive Vice-President: S. K. Lewer, B.Sc., G6LJ.

Honorary Secretary: H. A. M. Clark, B.Sc. (Eng.), G6OT.

Honorary Treasurer: A. J. H. Watson, F.S.A.A., G2YD.

Honorary Editor: Arthur O. Milne, G2MI.

Immediate Past President: A. D. Gay, G6NF.

Members: P. C. G. Bradley, G8KZ, C. H. L. Edwards, G8TL, R. H. Hammans, G2IG, F. G. Hoare, G2DP, S. E. Langley, G3ST, Capt. J. W. Mathews, G6LL, K. Morton Evans, O.B.E., GW5KJ.

G.P.O. Liaison Officer: Arthur E. Watts, G6UN.

General Secretary: John Clarricoats, G6CL.

## April Council Meeting

*Resume of the Minutes of a Meeting of the Council of the Inc. Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Monday, April 8, 1946.*

*Present:* The President (Mr. E. L. Gardiner in the Chair), Messrs. Bradley, Clark, Edwards, Evans, Hammans, Hoare, Lewer, Mathews, Milne, Watson, Watts and John Clarricoats (General Secretary).

*Apologies:* The Secretary presented apologies for the absence of Messrs. Gay and Langley.

(1) It was resolved to elect 4 Life Members (Messrs. Blow, Flavel, Leech and Hoare), 261 Corporate Members, 31 Associates, and 12 Junior Associates. Five Junior Associates were granted Corporate membership. Total elected, 313.

(2) The 140 Wing Radio Club (B.A.O.R.) applied for, and were granted, affiliation.

(3) Mr. T. S. Norton, G4KZ, wrote suggesting that international agreement should be reached "restricting the portion of the 28 Mc/s. band from 28,000-28,300 kc/s. for C.W." It was agreed to notify Mr. Norton that a letter dealing with this matter had already been sent to the A.R.R.L.

(4) It was reported that Mr. Watts and the Secretary had attended a meeting of the Wireless Personnel Committee, and had outlined the views of the Society regarding the setting-up of post-war wireless reserves.

(5) Mr. Spears, acting T.R. for Liverpool, wrote in regard to the payment of grants towards the cost of running local meetings. It was reported that the D.R. had attended the last Liverpool meeting and had explained to the members present that the general question of grants would be considered by the Council after the report of the D.R.'s Conference had been presented.

(6) It was agreed to apply to the G.P.O. for permission to set up two official broadcast stations, one in the London area and the other in the North-west of England, for the purpose of broadcasting Society news at appropriate intervals.

(7) The following procedure regarding BULLETIN advertising was approved.

(a) All present advertisers, other than those using the front cover space, to be advised that, as from the July, 1946, issue their advertisements can only appear in every third issue.

(b) No advertisement exceeding half a page in area to be published until the paper position improves.

(c) Advertisements in general to be of a type that appeals to members. Nebulous types of announcements to be held over.

(d) Small trade and private members advertisements to be published in the ratio of 1-4, the scale of charges, etc., to be maintained as at present.

(8) Correspondence was submitted from Mr. G. Shackle, acting T.R. for Bolton, in which he drew attention to the use by a non-member of the letters "R.S.G.B." in an advertisement published in the *Ratcliffe Gazette*. The correspondence was passed to the Society's solicitors for an opinion.

(9) Mr. Granfield, D.R. for the Home Counties, forwarded the following resolution passed at a recent District meeting held in Cambridge: "This District deprecates the lack of constructional articles in THE BULLETIN, and suggests that Council adopt the policy of allocating a certain sum of money annually to pay for suitable articles, as the District considers that the majority of junior members would be better catered for by such articles."

Council agreed that, until the paper position improves, no useful purpose would be served by varying present arrangements. In this connection the Editor reported that at the moment some 24 articles were set up awaiting publication, but due to pressure on the limited space available, it would probably be many months before they could all be absorbed. The President agreed to write to Mr. Granfield.

(10) A letter, dated March 12, from Mr. D. W. Howard, Director of Disposals (A), M.A.P., was considered. The text of the letter was as follows:—

"I have to acknowledge your letter of February 28 to Mr. Jenkins forwarding the long awaited reply from the Radio Industry Council to the proposal made in December, last, that if possible your members should meet their requirements of surplus radio equipment under the aegis of that Council."

"I am sorry that this particular possibility of meeting the needs of your members has not been found practicable, as we feel great difficulty in selling direct to private individuals or to groups of private individuals, while selling to trade channels."

"I believe you are aware that all the surplus radio sets in which you have shown an interest are unserviceable. So far we have not been asked to dispose of serviceable sets."

In view of the statement made in the last paragraph of the letter, it was agreed that the President, Executive Vice-President and the Secretary should interview Mr. Howard.

(11) It was reported that Messrs. Lewer, Clark and Edwards had visited Admiralty depots at Oldham and Glossop to discuss matters in connection with the disposal of surplus Admiralty equipment.

(12) Mr. H. R. Adams, Managing Director of the newly-formed McElroy-Adams Group, offered to donate to the Society a complete set of McElroy automatic transmission equipment. The offer was accepted with thanks.

(13) It was reported that correspondence had been received from British Monomark, Ltd., regarding QSL matters. The correspondence was passed to the appropriate committee for consideration.

(14) It was reported that to date only 987 replies to the Memorial Fund questionnaire had been received. It was decided to wait for a further month before considering future action.

(15) Mr. Watts reported that several members had protested at the low technical standard represented by some of the radio service trades listed in the March, 1946, BULLETIN. It was pointed out that the personnel in such trades have never been trained in many of the subjects listed in the City and Guilds of London Institute Radio Amateurs' Examination syllabus. The trade of Wireless Operator, R.A.F., had been specially mentioned in this connection. Mr. Watts explained that originally the Society had suggested that personnel in this trade should be granted exemption from the Morse test only. The Air Ministry had, however, informed the G.P.O. that Wireless Operators are trained to a standard sufficiently high to warrant them being granted exemption from the theory as well as the Morse examination. Of the 26 R.A.F. trades listed, only 11 appear to conform to R.S.G.B. views regarding exemption. Similar difficulties had arisen in connection with several Army trades. Council agreed that the Secretary would be justified in informing members that the Society did not accept responsibility for the revised lists of trades carrying exemption.

(16) It was reported that the G.P.O. had agreed that transmitting amateurs living in the Channel Islands may use the prefix "GC."

(17) It was reported that matters relating to the issue of portable licences were under discussion with the G.P.O. Due to the decision by the G.P.O. to issue 3-letter calls it will no longer be possible to identify portable call signs by means of the suffix "P."

(18) It was reported that the G.P.O. had agreed to issue 150 watt licences as soon as the 3·5, 7 and 14 Mc/s. bands are released. The G.P.O. had also agreed to press the Admiralty for the release to amateurs of the band 1,715-1,800 kc/s. on a shared basis.

(19) It was reported that the G.P.O. had agreed to make amateur frequency allocations above 25 Mc/s. at an early date, and to support at the next International Conference the Society's request for the band 21-21·5 Mc/s. to be made available to amateurs.

(20) It was reported that a few cases had occurred of interference to Government stations by amateurs working between 1,800 and 2,000 kc/s. Letters had been sent to the operators concerned.

(21) It was reported that severe interference to amateur stations operating within the 28-30 Mc/s. band was being caused by R.A.F. Radar stations. It was agreed to explore the position.

(22) It was reported that difficulties had arisen due to a decision by the G.P.O. to allow certain qualified pre-war A.A. licence holders to operate with high power and telephony under a 3-letter call sign. It was felt that the G.P.O. should have issued 2-letter call signs in such cases.

The meeting closed at 9.22 p.m.

## Situations Wanted

The General Secretary retains a confidential file of correspondence from members desirous of obtaining employment in the radio industry. Manufacturers or trading concerns with situations vacant are invited to communicate with the Headquarters of the Society.

## The G9's

We understand from the G.P.O. that calls in the G9 series are now being issued to commercial concerns.



### Certificates

The Council has decided that, due to changed circumstances, it will be necessary to revise the rules governing the issue of W.B.E., H.B.E. and B.E.R.T.A. certificates. In view of this decision no claims for such certificates can be accepted at present.

The Council appreciates that there is a demand for a British equivalent to the A.R.R.L. DX Century Club certificate, but again, in view of the unsettled state of Amateur Radio in many countries, coupled with the difficulty of checking claims for contacts with unofficial stations, it has been decided to take no action at present.

### District 12 Representative

Due to the illness of Mr. Seymour Buckingham, G5QF, the Council has appointed Mr. Sydney Howard, G8TY, 92, Arlington Road, Southgate, N.14 (Enterprise 3219), to act as Deputy D.R. for North London and Herts. All correspondence in connection with the Admiralty disposals scheme should be addressed to Mr. Howard who is in possession of the letters of authority.

Mr. C. R. Stevens, BRS 3009, 22 Bramford Court, High Street, Southgate, N.14, will continue as District 12 scribe.

### Another Successful P.D.M. at Leeds

The North Eastern P.D.M. held at the Great Northern Hotel, Leeds, on April 28, was a great success.

After the D.R., Mr. C. Sharpe, G6KU had opened the proceedings and introduced the visitors from Headquarters, the President, Mr. E. L. Gardiner, G6GR, welcomed all present on behalf of Council. He expressed regret on behalf of G6CL for the latter's absence and then reviewed the Society's position. Concerning the D.R.'s Conference held recently in Birmingham Mr. Gardiner stated that the underlying idea of the meeting was to obtain the opinions of D.R.'s on the running of the Society and to avoid creating an impression that it was being operated by London, for London. Regarding the Post Office Examination the President agreed that the Service trades exemptions list should be revised, but as the Society did not draw up the final list, it could not be held primarily responsible. Surplus equipment, Memorial Fund, Town and Country representation, were other subjects dealt with.

The next speaker was Mr. A. O. Milne, G2MI, who said that as the Society had offered the use of the BULLETIN to the G.P.O. for announcements on licence conditions, such notices could be read as official. He regretted the delay in the announcement of the opening up of the 1.8 Mc/s. band which facility had been sprung on Council by the Post Office. It was possible that sample frequencies up to 300,000 Mc/s. would be available to amateurs. Regarding the proposed charge for the QSL service, G2MI pointed out that as it was intended to provide envelopes and to pay postage, reasonably active members using the service would pay less than under the old system. He appealed to members to refrain from writing to H.Q. on trivial matters which could be dealt with by T.R.'s or D.R.'s.

Mr. R. M. Hammans, G2IG, then took over and addressed the meeting on "Operating." Special reference was made to "break in" and to the technical difficulties involved in changing over an aerial at keying speed.

After tea had been served, several members kept up a running fire of questions, most of which were dealt with adequately by the visitors from Headquarters.

A vote of thanks to the members of Council who had so kindly been present to address the meeting was proposed by the D.R. In his reply the President congratulated G6KU on his excellent organisation of the event and on the way in which members had supported him. About 100 members were present, including one lady member—quite an innovation for a North Eastern P.D.M. Official proceedings came to an end at 6.30 p.m., but informal discussions prolonged the event into the evening. GSUO.

### Stourbridge and District Radio Society

A General Meeting of the above society was held in King Edward's Grammar School, Stourbridge, on May 7, 1946, with approximately 30 members in attendance.

The following Officials and Committee were elected for the current year: President, Maj. J. Timbrell, G6OI; Vice-President, Mr. H. Littley, 2NV; Treasurer, Mr. A. Higgins, 8GF; Secretary, Mr. D. Rock, 8PR; Committee, Mr. C. McLean, 2CLS, Mr. J. Walker, 2HAS, Mr. V. Whittaker, 3UK, and Mr. Jacobs.

Following the business meeting G6OI gave a very interesting talk and demonstration on the fundamentals of Cathode Ray Tubes.

Future meetings will be held on the first Tuesday of each month, and full particulars may be obtained from the Secretary, Sandhurst, Vicarage Road, Ambleside, Stourbridge, Wores.

### Surrey Radio Contact Club

The Surrey Radio Contact Club commenced post-war activities on April 29, 1946, with a dinner at the Cafe Royal, Croydon.

The following Officers and Committee Members were elected: Chairman, Mr. N. Guy, G2DN; Vice-Chairman, Mr. C. W. Crook, G6BT; Secretary, Mr. L. C. B. Blanchard, BRS 3003; Treasurer, Mr. R. M. Herbert, G2KU; Committee, Messrs. J. H. Boyce, G4NI, S. E. Jones, G2FWA, with two more elections pending.

Thanks are due to Mr. S. A. Morley who, as Secretary, kept the Club's flag flying during the early months of the war.

During the course of the proceedings Mr. L. Hooke, G5XH (who, with Mr. E. Taylor (G5KW), founded the club in 1935), paid tribute to the radio amateur and his service during the war years. He felt sure that the amateur was held high in the estimation of the authorities, and is an invaluable asset during times of emergency.

Accommodation has been found difficult, but thanks to Mr. Drummond future meetings will be held on the second Tuesday of each month at 7.30 p.m. in a room at the "Blacksmith's Arms," South End, Croydon (at the end of High Street).

Newcomers will be welcomed and details of membership may be obtained from the Secretary, 122 St. Andrew's Road, Coulsdon, Surrey.

### New Service Radio Clubs

Mr. E. S. Mason is the Hon. Secretary of a new Amateur Radio Club which has been formed in Greece for the purpose of encouraging an interest in amateur radio among the Signals personnel of the 4th British Division. The Club operates under the call XACW using a German tank type transmitter, and plans are afoot to build a 100 watt station, and a rotary beam. Five metre tests are contemplated.

Members serving in Greece should contact the Secretary, c/o 4th British Divisional Signals, Salonika.

\* \* \*

Capt. D. Finlay Maxwell, who signs himself as "GM6RG Asst. Op." is the Secretary of the newly formed "Signals Radio Club, Singapore." Application has been made to the B.M.A. (M) for a licence.

In support of this application Capt. Maxwell wrote: "The Club has been formed with the intention of cultivating the great interest in radio shown by many men, especially in Signals. The method is to form a highly disciplined authorised Club within which all this keenness can be pooled, and guided by the Club's technical committee into those channels most deserving experimental work."

The Club has 40 foundation members, several of whom have had previous experience as transmitting amateurs.

The President of the Club is Capt. J. P. Edwards, G3WH.

### East Africa Call Signs

The following Amateur Call Signs had been issued up to the end of April, 1946:—

#### Kenya

VQ4AJI	A. J. A. Irvine	.. Box 1002, Nanyuki.
VQ4REW	R. Woolfall ..	.. Box 581, Nairobi.
VQ4ERR	E. Robson ..	.. Box 1313, Nairobi.
VQ4CRE	S. A. Pegrum ..	.. Box 1093, Nairobi.
VQ4CRM	James Scott ..	.. Box 1246, Nairobi.
VQ4CRC	H. J. Walker ..	.. Box 986, Nairobi.
VQ4MNS	Maj. M. N. Salmon	.. EME Branch, Box 4900 Nairobi.

#### Tanganyika

VQ3TOM	T. M. W. Millar	.. Aeradio Station, Dar-es-Salaam.
VQ3EDD	H. J. Edwards	.. P.O. Box 166, Dar-es-Salaam.
VQ3RCS	R. C. Stead ..	.. Aeradio, Mbeya.
VQ3EJT	J. Thompson ..	.. Aeradio, Dar-es-Salaam.
VQ3LAT	Miss P. Latour	.. Land and Mines Department, Dar-es-Salaam.

### Congrats

● To Mr. C. T. Fairchild, G3YY, of Barnet, Herts., on the birth of a daughter, Beryl Hilda, on May 25.

● To Dr. and Mrs. T. A. Appleby, G3RZ, on the birth of a daughter on May 15.

● To Sgt. R. Wilkins, G2ALM, who has been Mentioned in Despatches.

## Silent Key

We record, with great sorrow, the passing of Wing Commander F. N. MacDowell, G15MZ. Fred MacDowell was a real old-timer in the field of radio, his interest dating back to 1913. During the 1914-1918 war he served first with the R.E.'s and later with the R.F.C. and R.A.F. He took out his first amateur licence in 1929 and was active up to the outbreak of the last war. He joined the R.A.F. in May, 1939 and served with the Special Branch (Signals) in France, England, West Africa and Gibraltar. Whilst in "Gib" he helped to form the Gibraltar Amateur Radio Club which functioned so successfully during the latter war years. Demobilised at the end of 1945 he had intended to return to Amateur Radio but was taken ill during Easter and died on the Morning of May 1.

Our deep sympathies are extended to his relatives and close friends.

G15SJ.

## EXCHANGE AND MART SECTION

**MEMBERS PRIVATE ADVERTISEMENTS.** Due to pressure on our limited space no guarantee can be given that publication will be made in the issue following receipt of order. **RATES.** 18 words or less 3/-. Maximum number of words accepted 50, at 2d. per word. **TERMS.** Cash with order to Parss Advertising Ltd., 121 Kingsway, London, W.C.2.

**ALUMINIUM.**—New sheets, panels, chassis, racks, instrument cases, etc. Sheet minimum quantity 6, postage 1s. 18 gauge 18 in. square, 3s. 6d.; 15 in. square, 3s.; 12 in. square, 2s. 6d. each. Sheet sent parcel post at your risk. Packing cases charged 2s. 6d. returnable, carriage extra. S.A.E. Lists.—**AMATEUR RADIO SERVICE**, 66HP, Canning Street, Burnley.

**AVOMETER** Universal pre-war quality, recalibrated, £14. Metal cabinet fitted Eddystone 973 S.M. dial, 25s. 1C5G, 7s. 1G6G, 10s. 2v triodes, 3s. 3d.; pentodes, 4s. 6d.; morse key, 5s. Many other items. S.A.E. List.—Box A/80, PARSS, 121 Kingsway, London, W.C.2.

**AVO-MINOR** D.C. with case. Perfect condition. Nearest offer £4 secure.—Box A/88, PARSS, 121 Kingsway, London, W.C.2. **BOOK** your order for the new Pullin multi-range meter 10,000 ohms per volt; £8. Delivery approx. 6 weeks.—M.O.S., 24 New Road, London, E.1.

**C.R.O.** 3 in., Puckle time-base. "Y" amplifier, less dust cover; first £15.—**POLLOK**, 275 Kingsbridge Drive, Rutherglen, Glasgow.

**D.C. ELIMINATOR**, 25s. Beautiful unused cutting head for home recorder, £7. T. & R. Bulletin. What offers for 1936, 1937 and 1938 complete, 1939 less June and December? All in binders.—**G6ZY**, 47 Putney Hill, London, S.W.15.

**ENTERPRISE** Radio Laboratories for Short Wave transmitting and receiving products including Eddystone (Regd. Dealers) and Hamrad (Agents for Middx. and Bucks.). Prompt mail order service. Transmitters and auxiliary equipment, built to specification. Service, overhauls and re-alignment on communications receivers.—**G5JM**, 215 Broadway, Southall, Middlesex.

**EX.—R.A.F.** transmitter-receivers, model TR9, complete with 9 valves, new condition, ready for operation, or contains many useful items for your rig. Relays, short wave condensers, silver-plated inductances, thermo coupled meter, milliammeter, etc., £6, carriage paid. Trade enquiries invited.—**STAMFORD RADIO CO.**, 199 Stamford Street, Ashton-under-Lyne.

**FOR SALE.**—**BULLETINS**, volumes 13 to 21. Short Wave Magazine, complete set. Further details from:—**BURTT**, Weaver's House, Burleigh, Stroud, Glos.

**FOR SALE.**—1000v wkg 2uF con. 5s. each. '01, '02, '001, '002uF, tub screened, 1000v wkg, 9d. each. (2) 807's, 35s. (1) 803, £5. (2) 955, £1. (2) PP5/400's, 24s. 4d. Brand new F. T. SMITH, 25 Moor Street South, Wolverhampton.

**FOR SALE.**—25 watt phone and c.w. transmitter in rack, complete with double-button microphone in chrome stand, G.P.O. type morse key. 438 "Howard" communication receiver 230-250 volts. Universal Taylormeter 90A. 40 ranges, new. Admiralty Wireless Handbooks, 1-2, etc.—Best offer: write **MEADS**, 21 Millfield Cottages, Sompting, Sussex.

**HAMMARLUND** Super Pro with pack and speaker, 20Mc/s-540kc/s, perfect.—Offers? **RK20A**, unused; £4 10s.—**G8WL**, 26 Waverley Road, Kenilworth.

**HAMRAD** Wholesale Ltd., 348 Portobello Road, London, W.10 offer concentric cable, SCF92, 65 to 75 ohms impedance per yd., 1s. 2d.; Twin feeder, 2 x 18 swg. conductors, approx. 72 ohms impedance, per yd., 7d.; both types have polythylene insulation and ex B.L. Callenders works. June List available. Send Id. stamp.

**H.R.O.** Coils, 14-30Mc/s, 315-7-3Mc/s, 180-430kc/s, 175-400kc/s, 50-100 kc/s, 100-200kc/s. Perfect condition. What offers?—Box A/88, PARSS, 121 Kingsway, London, W.C.2.

**INSURE** your Radio Equipment. Special terms to cover Fire, Burglary, Damage and Legal Liability of Members of Radio Society of Great Britain are quoted by the Edinburgh Assurance Company Limited.—Apply for particulars to 1-2 Royal Exchange Buildings, London, E.C.3.

**KING'S** Patent Agency Ltd. (B.T. King, G5TA, Mem. R.S.G.B. Reg. Pat. Agent), 146a Queen Victoria Street, London, E.C.4. Handbook and Advice on Patents and Trade Marks free. Phone: City 6161. 50 years' refs.

**MAINS** Transformer (Chester), 650-0-650, mA, 7.5v, 35s. Power pack (Cosmos), smoothed, tapped primary, output 250v (4 tappings, one variable), 4v L.T., cased, neat, 40s.—**G2AT**, Vleage, Exminster, Devon.

**MILLIAMETERS**, 2in. flush mounting (square flange) moving-coil D.C. milliammeters, 0-50, 0-100 and 0-500mA, by Elliott. New, boxed; 39s. 6d. each.—**PICKFORD**, 46 Greyhound Road, London, W.6.

**MONOMARK** service.—Permanent London address. Letters redirected. Confidential. 5s. p.a. Royal patronage. Key tag, 9d.—Write **BMM/ON07A**, W.C.1.

**MORSE** Code training at home. Send for Candler "Book of Facts" Courses for Beginners and Operators (Room 55) **CANDLER SYSTEM CO.**, 121 Kingsway, London, W.C.2.

**NATIONAL** H.R.O. coils and other ham gear for disposal. S.A.E. inquiries.—Box A/98, PARSS, 121 Kingsway, London, W.C.2.

**NEW** R.C.A. tubes. 813, £3. 805, £2. Also R.C.A. 9001, 9002, slightly used, 10s. Featherweight headphones, 7s. 6d. Ericsson phones, 10s.—**GSUA**, 469 Higher Brunshaw, Burnley, Lancs.

**NEW** Communication receiver 8v. 18Mc/s-200kc/s, separate R.F. and A.F. gain, var., B.F.O., A.V.C., noise filter. High and low imp. 4W output, 230v. A.C. made by Philips; £25. Also 954 Acorns (2) 17s. 6d., 10 (2) 6s., APP4G, 11s., 46, 6s. each. Wanted: 866 Jnrs.—**G3LB**, 25 Clotholme Road, Ripon, Yorks.

**NEW** pre-war American "Gross" CB-55 fone/cw transmitter. Pair TZ20's final modulated by 6L6's class B. Enclosed rack assembly; complete all accessories, crystal-mike, etc. S.A.E. illustrations. £75 or near offer.—**TYLER**, Ingelmells, Stoughton Road, Leicester.

**PAIR** of unused 805's and 813's, £2 each. Four unused 866's, 25s. each. National NC101X with speaker, new condition, perfect, £50. H.R.O. brand new, unused. 9 set of coils. Two power packs 230 A.C. and 6 volts D.C., £95.—**WATERS** (GW3GO), Kenfig Hill, Glam. Tel: 104.

**R.A.F.** Transmitters T1154, M.O.P.A. Two PT15 in P.A. in cases with circuit, £7, carr. fwd.—**LANE**, G2BYA, King's Road, Shalford, Surrey. Please reserve first.

**R.M.E.69** communication receiver, excellent condition, real dx-er, £50.—**2BTY**, "Kandersteg", Pond Head Lane, Earley, Berks.

**ROTHERMEL** Omni directional double cell BR2S crystal microphone, brand new, £8 10s. 0d. Vitavox 12 watt high fidelity speaker, brand new, £5. Three coils for Senior H.R.O. 50-100kc/s, 100-200kc/s, 180-430kc/s, £15 or sold separately. Required: High class commercial transmitter. Cash waiting.—104 High Street, Herne Bay. Phone 921, daytime.

**SALE.**—Halliafter 827 receiver, 27.5 to 145 Mc/s, fm/am. Perfect order, recently overhauled and re-valved, £60.—Box A/77, PARSS, 121 Kingsway, London, W.C.2.

**SALE.**—Halliafter super Skyriders, crystal model, offers over £35. Exchange 7 in. television CRT, oscilloscope CRT, RK39, RK34 and 55 for Sky Buddy or similar rx.—Box A/79, PARSS, 121 Kingsway, London, W.C.2.

**SALE.**—Walkie-Talkie: complete vibrapak, batteries, sachels and instructions; £15 15s. R.A.F. 1154 Tx: complete less power pack £8 15s. Valves: 80, 6J7G, 6SQ7, 6SN7, 6KS, 6F6, 10s. each. Sprague electrolytics: 8uF 500v, 3s. 6d., 1uF 500v, 1s. Line cord res. .3A, 9d. foot.—**VU2AU/G4BL**, 6 St. Michaels Avenue, Edmonton, N.9.

**SALE.**—87 QST's, 1929-30, 1936-43, the lot £4 4s. 0d., plus carriage. DET 1, 30s.; 210's, 5s.; 59's, 5s.; PX100 new, 45s.; 211E's, 20s. Eddystone 6-pin coils, 2s. 6d.; 3-valve battery S/W receiver 160 to 11 metres, £3.—**MARTIN**, 268, Carlton Road, Workop.

**SEVERAL** power type 3-5Mc/s crystals in plug-in, dustproof holders; £1 each. All in harmonic relationship with 7 or 14Mc/s. Also much good surplus gear, cheap. Let me know your wants.—**GSUA**, 469 Higher Brunshaw, Burnley, Lancs.

**SKY** Champion, just overhauled, £28, perfect. New metal American valves, all 10s. each: 1852, 6B8, 6SC7, 6K8, 6AG7, 6SS7, 6SH7, 12SQ7, 12SK7, 12A6, 12K8, 12SR7, 12SG7, 12C8, RCA 807's, £1. National velvet vernier dial, 12s. Numerous condensers, etc. Hammarlund tx cond., 12s. 6d. Send for list.—57 Briarlands Avenue, Sale, Cheshire.

**SOLDERING** tag strips and panels made up to any size and layout at 2d. per square inch. Any quantity, prompt delivery.—**MORETON CHEYNEY**, Gaol Road, Stafford.

**THE** Silver Dragon, combined communications and quality receiver. Something new; it will be worth while investigating. Descriptive brochure for 2d. stamp from **THE MORETON CHEYNEY COMPANY**, Gaol Road, Stafford.

**TWO** HY40 unused, boxed, £3 5s. pair. Amateur built communication superhet, two R.F. stages, band-pass I.F.'s, controlled regeneration, hot on 28mc. Complete with valves, for 200/250 A.C., £17.—**G21Q**, 44 Taptin Hill Road, Sheffield, 10.

**VALVES.**—(1) 9002, (1) PT15, (1) 807, several IT4's, IR5's, 384's, IS5's, all unused.—Offers to "BROOKLEY", Castlerock, N. Ireland.

**WANTED.**—Barker-Williamson, Coto or similar coils. National SW3. Harvey UHX-10 transmitter. Halliafter's, HT-7, frequency standard. National ACN dial. National HRO (state year, price, fullest details). S.P.D.T. and D.P.D.T. R.F. and other A.C. or D.C. relays. Hand generator 300-600v, output preferably including L.T. rotary converter 12-24v input, 400v 250mA output.—Box A/68, PARSS, 121 Kingsway, London, W.C.2.

**WANTED.**—Voigt corner cabinet speaker, with twin cone unit, cash waiting.—51 Fairway, Stafford.

**WANTED.**—Halliafter's SX27 or RME DM36 or DM30X, good price for one guaranteed perfect, and in new condition.—Box A/92, PARSS, 121 Kingsway, London, W.C.2.

**WANTED.**—Good communication receiver, 9-200 metres.—Details to **ACTON**, St. Leonards, Exeter Road, Honiton, Devon.

**WANTED.**—National H.R.O., 101X or 81X receiver in good condition.—Details, cost, etc., Box A/96, PARSS, 121 Kingsway, London, W.C.2.

**YORKSHIRE'S** Ham Specialists.—Fairbank's, 6a Lowtown, Pudsey, offer from stock: 72 ohm Telephone feeder, Sifam 2in. meters, T.C.C. and Static condensers, 7mc crystals. Metal 6L6, 6J5GT, 35T, S.T.C. Equivalents 807, 83, 866, Osram DA41c ceramic base (TZ40), Woden transformers, Raymart, Hamrad, Eddystone components.—Send your requirements to **TECHNICAL DEPT.—G5PW**.

**6-VALVE** 40 watt mod. p.p. 210's, four Thordarson trans., including 7.5v fil., £8; power pack for same 300v and 500v (twice), 2.5, 4 and 5v L.T., good chokes, HV cond. and rect., £9 L.T. trans. 6-3 and 2-5v, 25s.—**EDGE**, Green Mount, Stamford Road, Bowdon, Ches.