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BULLETIN

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MARCH 1952

R.S.G.B. Bulletin

Vol. xxvii No. 9 March, 1952

CONTENTS

Forthcoming Events

REGION 1

Blackpool.—March 18, G3FYZ, 351 Whitegate Drive.
Chester (C. & D.A.R.S.).—Tuesdays, 7.30 p.m., Tarran Hut, Y.M.C.A.
Darwen & Blackburn.—April 18, 7.30 p.m., Y.M.C.A., Limbrick, Blackburn.
Liverpool.—March 15, 29, 2.30 p.m., Larkhill Mansion House, West Derby.
Southport.—March 24, April 7, 21, 8 p.m., Y.M.C.A., off Eastbank Street.
West Cumberland.—April 5, 7 p.m., Kells Community Centre, Whitehaven.
Wirral (W.A.R.S.).—March 26, April 9, 23, 7.45 p.m., Y.M.C.A., Whetstone Lane, Birkenhead.

REGION 2

Barnsley.—March 28, 7.30 p.m., King George Hotel, Peel Street.
Bradford.—March 25, April 8, 7.30 p.m., 66 Little Horton Lane.
Catterick & Richmond.—Wednesdays, 7 p.m., Loos Lines, Catterick Camp.
Darlington.—Thursdays, 7.30 p.m., 129 Woodlands Road.
Doncaster.—April 9, 7.30 p.m., Black Bull, Market Place.
Gateshead.—Thursdays, 7 p.m., Y.M.C.A. Sutherland Hall, Durham Road.
Hull.—March 26, April 9 (Beginners), 7.30 p.m., R.E.M.E. Canteen, Walton Street.
Leeds.—Wednesdays, 7.30 p.m., Swarthmore Educational Centre, Woodhouse Square.
Middlesbrough.—Thursdays, 7.30 p.m., Joe Walton's Boys' Club, Feversham Street.
Newcastle-upon-Tyne.—March 24, 8 p.m., British Legion Rooms, 1 Jesmond Road.
Pontefract.—March 20, April 3, 8 p.m., Fox Inn, Knottingley Road.
Rotherham.—Wednesdays, 7 p.m., Cutlers Arms, Westgate.
Scarborough.—Thursdays, 7.30 p.m., L.N.E.R. Rifle Club, West Parade Road.
Sheffield.—March 26, 8 p.m., Dog & Partridge, Trippet Lane; April 12, 8 p.m., Albreda Works, Lydgate Lane.
Staithwaite.—Fridays, 7.30 p.m., 3 Dartmouth Street.
Sunderland.—March 19, April 2, 7.30 p.m., 16 North Bridge Street.
York.—Wednesdays, 7.30 p.m., Club Rooms, Y.R.S., Fetter Lane

REGION 3

Birmingham (South).—March 16, 10.30 a.m., "Power Wiring," by G8JI, Stirchley Institute, April 6.
Coventry.—March 28, 7.30 p.m., N.F.D. Plans, Priory High School, Wheatley Street.
Kenilworth (including Warwick & Leamington).—March 20, 7.30 p.m., Dalehouse Lane.
Rugby.—April 1, 7.30 p.m., Public Library, Mather Street.
Stourbridge.—April 1, 8 p.m., King Edward's School.
Worcester.—Contact T.R., G8JC.
Wellington.—Mondays, 8 p.m., Y.M.C.A. Canteen.

REGION 4

Alvaston (D.S.W.E.S.).—Tuesdays, Thursdays, 7.30 p.m., Sundays, 10 a.m., Nunsfield House, Alvaston, Nr. Derby.
Chesterfie'd.—March 25, April 8, 7.30 p.m., Bradbury Hall, Chatsworth Road.
Derby (D. & D.A.R.S.).—March 19, 26, April 2, 9, 16, 7.30 p.m., Derby College of Arts & Crafts, Sub-Basement, 119 Green Lane.
Leicester (L.R.S.).—March 17, April 7, 21, 7.30 p.m., Holly Bush Hotel, Belgrave Gate.
Loughborough.—March 19, April 16, 7.30 p.m., Great Central Hotel.
Mansfie'd (M. & D.A.R.S.).—April 6, 3 p.m., Swan Hotel.
Newark.—March 16, 30, 7 p.m., Northgate House, Northgate
Northampton (N.S.W.C.).—Fridays, 6 p.m., April 4, 7 p.m., Club Room, 8 Duke Street.
Retford.—April 6, 3 p.m., Community Centre, Chapel Gate. March 27, 28, 29, RADIO EXHIBITION, 3 to 9 p.m., Retford Town Hall. Station G3BTU/A. All bands.
Worksop.—April 7, 7 p.m., King Edward Hotel.

REGION 5

Chelmsford.—April 1, 7.30 p.m., Marconi College, Arbour Lane.
Ipswich.—March 26, April 9, 7.30 p.m., Territorial Drill Hall, Woodbridge Road.
Norwich.—March 27, 8 p.m., "The Duke's Palace," Duke Street. General discussion, "Local R.S.G.B. Affairs."
Southend-on-Sea.—March 26, 7.45 p.m., G2BHA, 27 Park Rd

REGION 6

High Wycombe.—March 25, 7.30 p.m., G2RL, Denewood, Totteridge.
Petersfield.—April 3, 7.30 p.m., The Market Inn, The Square.
Southampton.—April 5, 7.30 p.m., 22 Anglesey Road, Shirley

REGION 7

Acton, Brentford, Chiswick.—Every Tuesday, 7.30 p.m., A.E.U. Rooms, 66/68 High Road, Chiswick, W.4.
Barnes & Richmond.—April 8, 7.30 p.m., 308 Upper Richmond Road.
Barnet & Boreham Wood (B.A.R.S.).—April 12, 7.30 p.m., Bunny's Restaurant, New Barnet. **(B. & D.R.C.)**—March 19, 26, April 2, 9, 16, 8 p.m., "Hopedene," The Avenue, Barnet.
Bexley (N.K.R.S.).—March 24, April 14, 7.30 p.m., Freemantle Hall.
Brentford & Chiswick.—Tuesdays, 7.30 p.m., A.E.U. Rooms, 66 & 68 High Road, Chiswick.
Bromley, Kent (N.W.K.A.R.S.).—April 6, 7.45 p.m., "The Shortlands Tavern," Station Road, Shortlands.
Chingford.—March 27, 8 p.m., 1 Essex Road, E.4; April 4, 8 p.m., A.T.C. H.Q., Pretoria Road, E.4.
Dulwich & New Cross.—April 7, 7.45 p.m., "Kentish Drovers," Rye Lane, Peckham.
East Ham.—Fortnightly, 8 p.m., 57 Leigh Road.
East London.—March 23, 3 p.m., Ilford Town Hall. "Amateur Radio in the East and West," Dr. G. Bloomfield, G2NR.
East Molesey (T.V.A.R.T.S.).—April 2, 8 p.m., "Carnarvon Castle," Hampton Court.
Edgware (E. & D.R.S.).—Wednesdays, 22 Goodwin Avenue, Mill Hill.
Enfie'd.—March 16, April 20, 3 p.m., George Spicer's School, Southbury Road.
Finsbury Park.—March 18, 7.30 p.m., 164 Albion Road, Stoke Newington, N.16.
Grays.—March 28, 8 p.m., Baird's Cafe, Orsett Road.
Guildford & Woking.—March 23, 3 p.m., Royal Arms Hotel, North Street.
Hayes & Uxbridge.—April 4, 7.30 p.m., "The Vine," Uxbridge Road.
Hoddesdon.—April 3, 8 p.m., "Salisbury Arms."
Holloway.—Mondays, Wednesdays and Fridays, 7.30 p.m., Grafton School, Eburne Road, N.7.
Ilford.—Every Thursday, 8 p.m., "Junko," 579 High Road, Ilford.
Kensington & Shepherds Bush.—April 18, 8 p.m., 38 Royal Crescent.
Kingston (K. & D.A.R.S.).—March 21, 26, April 4, 9, 7.45 p.m., Penrhyn House, 5 Penrhyn Road.
Lewisham (R.A.R.C.).—Every Wednesday, 8 p.m., Durham Hill School, Downham.
Norwood.—March 15, April 19, 7.30 p.m., 35 Grangecliffe Gardens, South Norwood.
Slough.—March 21, April 18, 7.45 p.m., "The Golden Eagle," High Street.
Southgate.—April 10, 7.30 p.m., Arnos Secondary Grammar School, Geography Room, Wilmer Way, New Southgate.
Watford (W.R.A.T.S.).—Tuesday fornightly, 7.45 p.m., "Cookery Nook," The Parade, Watford.
Welwyn.—April 1, 8 p.m., Council Offices, Welwyn Garden City, V.H.F. Night.

REGION 8

Brighton (B.D.R.C.).—Tuesdays, 7.30 p.m., Eagle Inn, Gloucester Road. **(E.B.S.W.C.).**—Thursdays, 7.30 p.m., 27 Warren Avenue, Woodingdean.
Chatham (M.A.R.T.S.).—Mondays, 7.30 p.m., Co-operative Hall, Luton Road.
Eastbourne.—March 20, April 3 and 17, Swallow Cafe, 333 Seaside.
Gillingham (G.T.S.).—Alternate Tuesdays, 7.30 p.m., Medway Technical Institute.
Hastings (B. & H.R.C.).—March 25, April 8 and 22, 7.30 p.m., Saxons Cafe, Seafront, Hastings.
Isle of Thanet (I.O.T.R.S.).—Fridays, 7.30 p.m., George Hotel, Hawley Street, Margate.

REGION 9

Bath.—March 17, 7 p.m., 12 Pierrepont Street.
Bristol.—April 18, 7 p.m., Carwardine's Restaurant, Baldwin Street, Bristol 1.
Exeter.—April 4, 7 p.m., Y.M.C.A., 41 St. David's Hill.
North Devon.—April 3, 7.30 p.m., Rose of Torridge Cafe, The Quay, Bideford.
Penzance.—April 3, Railway Hotel.
Plymouth.—March 15, 7 p.m., Tothill Community Centre, Tothill Park, Knighton Road, St. Judes.
Torquay.—March 15, 7.30 p.m., Y.M.C.A., Castle Road.
Weston-super-Mare.—April 1, 7.30 p.m., Y.M.C.A.
West Cornwall (W.C.R.C.).—March 20, April 3, "Fifteen Balls," Penryn.
Yeovil.—Wednesdays, 7.30 p.m., Grove House, Preston Rd.

REGION 11

Llandudno.—April 2, 7.30 p.m., Station Restaurant.

REGION 13

Edinburgh (L.R.S.).—March 20, thence fortnightly, 7.30 p.m., Edinburgh Chamber of Commerce, 25 Charlotte Square.

REGION 14

Falkirk.—March 28, 7.30 p.m., The Temperance Cafe.

R·S·G·B· BULLETIN

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VOLUME XXVII No. 9 MARCH 1952

CURRENT COMMENT

Supremumque Vale

THE sudden death of the King brought to British radio amateurs a wave of sympathy from their fellows all over the world. To the Headquarters office of the Society came message after message, from within and without the Commonwealth, showing the high regard in which the Monarchy is held by all sorts and conditions of men, every one of whom is a link in the chain that is Amateur Radio.

By reflection we may feel that this esteem falls upon his subjects as well as upon the Sovereign himself. For if our overseas friends did not regard Britain, its late King and its people with affection and respect they assuredly would not have transmitted their condolences to us in so spontaneous a manner.

The occasion reminds us that British institutions and the British way of life are still an example to many. In our own small world of Amateur Radio that is also true. Let us make quite sure that each one of us upholds that example.

Year-long Season

NOT so very long ago—very roughly, until the start of the war—the yearly round of Amateur Radio activities fell naturally into two subdivisions. There was the operating season from Autumn until late Spring, and there was the quiet season when conditions were low and static was high, and holidays, gardening and other outdoor preoccupations put the padlock on The Most Important Room of the House, commonly known as "The Shack."

That is not so today. Knowledge of the peculiarities of our long-distance communication bands is such that, subject to the correct choice of frequency, contacts over great distances are possible at most times of the year.

That is a development which would have occurred anyway as knowledge increased.

But there are two other factors that tend to spread the radio season over the whole twelvemonth. Both were becoming manifest in the last year or two before 1939 and have gathered momentum more recently. One of them is National Field Day, which holds clear claim to be easily the most important and popular event of the R.S.G.B. year. The other is the growth of v.h.f. communication.

In respect of Field Day there can, of course, be only one time at which to hold it in a climate such as ours, and that is high summer. Preparations for it in most centres begin months ahead, and have their own effect in prolonging the interest in Amateur Radio which might otherwise be tempted away to other things as the "DX" season wanes and the lighter evenings arrive.

Nor does the graph of activity tail-off suddenly when National Field Day is over for another year. Interest is sustained by the fascinating beckoning of the v.h.f. bands that come into their own during those warm months when propagation is at its best—and at times even beyond those warm months right up to December, as happened in 1951. The Summer concentration on 2 metres is a natural trend, though not a particularly healthy one; the cause of the v.h.f.'s would be better served were many more amateurs to use them when the going is tough rather than to confine their activities to those times when ducting gives promise of easy DX.

Background Noise

BECAUSE the R.S.G.B. BULLETIN is primarily a technical journal, it does not have space to spare to indulge in long polemics about Amateur Radio politics. It refuses therefore to be tempted by Austin Forsyth's article in the February issue of *The Short Wave Magazine* into fruitless argument. And it has no intention of dealing point by point with Mr. Forsyth's suggestions. Obviously, the Council must take note of them. But since his general attitude towards the R.S.G.B. was so effectively dealt with by "A.O.M." in the November, 1951, issue of this journal, there seems no point in going over the same ground again with the possible danger of its developing into a "did, did not" discussion to the general exasperation of all those amateurs who want to get on with their hobby.

Each member can form his own opinion as to why Mr. Forsyth's attacks should be launched, and can ask himself why other contemporary journals

such as *Wireless World* or *Short Wave News* see no reason to make them.

Each member, too, can observe for himself the studied omission from *The Short Wave Magazine*, over a very long period, of references to the many major R.S.G.B. events that form so important a part of the Amateur Radio year (*e.g.*, National Field Day). Truly, charges of lack of co-operation come strangely from Mr. Forsyth.

And each member can indulge his own quiet smile at the suggestion that the *Magazine* should become the official R.S.G.B. mouthpiece, with the elimination of the R.S.G.B. BULLETIN—and the major source of competition!

Yes, each member can come to his own conclusions about why the argument was ever started in the first place by *The Short Wave Magazine*.

Whatever the causes, it is clear that these outside assaults have, if nothing more, strengthened the Society—probably done it good, and benefited the assailant not one whit. In all aspects of history, attacks from outside a body politic have always resulted in the closing of the ranks. This was no exception.

There is one place, and one place only, for those who sincerely believe that they can further the direction of the Society, and that is as a Member of the Society's governing body—the Council itself.

J.H.

FACTS . . .

About the Bulletin

- *The* BULLETIN *has appeared every month for nearly 27 years.*
- *The last 12 issues have contained 542 pages compared with 476 pages for the previous 12 issues.*

About Other Society Publications

- *The Society is not a commercial publishing concern, but it is permitted by its Memorandum—drawn up 26 years ago—to print, publish and sell works or treatises on radio science or its applications. This it does.*
- *As far back as 1933, the Society published the 1st Edition of "A Guide to Amateur Radio." A new edition appeared at each of the five National Radio Exhibitions from 1933 to 1937.*
- *"The Amateur Radio Handbook"—first published in 1938—grew out of the "Guide."*
- *No less than 189,000 copies of the 2nd Edition of the Handbook and 115,000 copies of the "Radio Handbook Supplement" were sold.*
- *The funds of the Society increased by £11,000 from the sale of the Handbook and Supplement.*
- *Since 1946, the Society has published a series of 9 technical booklets, each dealing with a specialised subject.*
- *The funds of the Society have increased by £5,000 from the sale of these booklets and other cash sales items. None of these booklets has individually failed to show a profit.*
- *In August, 1951, the Society published the 1st Edition of the "Amateur Radio Call Book."*
- *The funds of the Society have increased by more than £100 from the sale of this publication.*

About the Society's Organisation

- *At the Regional Representatives' Conference held in April, 1951, the Representatives recommended—"that the Council shall be composed of the President, the Immediate Past-President, the Executive Vice-President, the Honorary Officers, and a Representative elected by the members in each Region: that the conduct of the Society shall be entrusted to an Executive Committee consisting of the President, the Immediate Past-President, the Executive Vice-President, the Honorary Officers, and five other members of the Council; that the full Council shall meet at least four times per annum to receive the report of the Executive Committee, and give such directions to policy as shall be required.*
- *There are at present nearly 200 Regional, County, Town and Area Representatives holding office.*
- *The Society is still operating on subscription rates fixed in 1926.*

About Licences

- *Because the Society continued in active operation and maintained liaison with the G.P.O. throughout the 1939-45 war, Amateur Transmitting Licences were restored within a few months of the cessation of hostilities.*
- *Negotiations between the Society and the G.P.O. have resulted in many improved post-war licence facilities. These include:*
  - *(a) Granting of full permits to all pre-war holders of non-radiating licences, subject to passing the Morse test.*
  - *(b) Permission to use Frequency Modulation.*
  - *(c) Removal of aerial restrictions.*
  - *(d) Permission to use 150 watts after a probationary period.*
  - *(e) Amateur Television.*
- *Service exemptions from the Morse and Technical examinations and plans for the Radio Amateurs' examination were negotiated by the Society.*

. . . NOT FANCIES!

LET'S LOOK AT DX CONDITIONS

By BASIL WARDMAN, G5GQ*

In this article the author suggests that despondency over apparently poor DX conditions is unnecessary ; that after a few exceptional years conditions are returning to average ; and that with a little thought all amateurs can enjoy their hobby as much as ever. Log entries throughout the past twenty-five years are examined to support his contention.

IT is said, perhaps with some truth, that most people will believe anything—if it is repeated often enough ! So, with all the talk of poor DX conditions that has been flooding the air for months, the writer became equally convinced and added *his* quota to the snowball of depression, until the idea occurred one evening, of comparing the number of DX contacts made during 1951 with that of 1950. The surprising fact emerged that in 1951, a supposedly bad year, the number was actually in excess of any post-war year !

Experts talk glibly about 300-year maxima, sunspot cycles, the passage of Jupiter, etc., all of which are perfectly valid for their purpose, *i.e.* commercial point-to-point working for a certain number of hours each day. But we, as amateurs, are neither running a commercial service, nor concerned with working the same station day after day ; the majority of us are interested in communicating with other stations, and if some of these are a long way off, well—it adds to the thrill.

These notes are intended for the average amateur, with limited time for his hobby, who likes to get the maximum enjoyment out of his activities —which usually means the number of stations he can contact whilst on the air. The writer's log has been analysed for 25 years back, the number of DX contacts worked each year obtained, and their distribution into continents calculated on a percentage basis.

Basic Statistics

Obvious queries will be raised about power and location. In pre-war days, G5GQ was blessed with very high power facilities and excellent aerial masts. Since the war, life in a flat has limited power to an absolute maximum of 150 watts (a pair of 807s), many contacts being made with only 18 watts input ; no real aerial facilities are available—20 ft. of thin wire being used as an "invisible" aerial strung ten inches outside and along the wall of the steel-framed building. The extremes of amateur location and power difficulties have therefore been encountered at various times during the years analysed.

* *59 Eton Place, Eton College Road, London, N.W.3.*

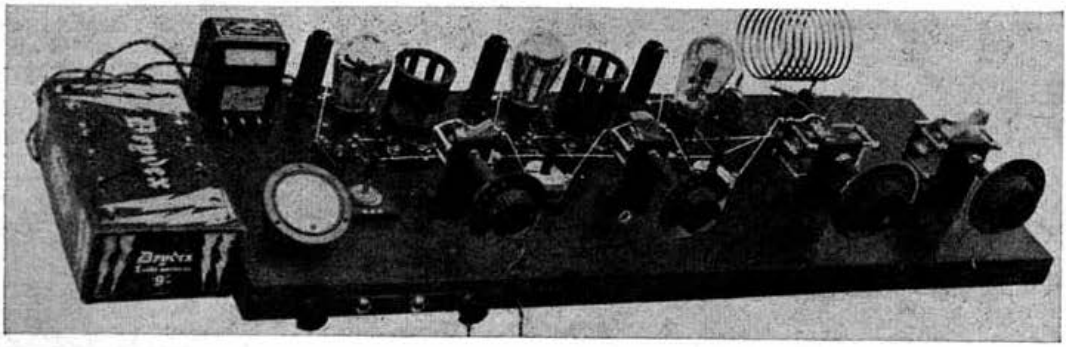
"DX" is interpreted as contacts with stations outside Europe, the bands used being 10, 20 and 40 metres pre-war, and, owing to aerial difficulties, 10 and 20 metres post war. Here are the figures over six years, taken at random pre-war, with all post-war figures in full.

Geographical Area	1935	1938	1948	1949	1950	1951
	(per cent.)	(per cent.)	(per cent.)	(per cent.)	(per cent.)	(per cent.)
N. America (excluding Pacific Coast)	52	64	21	64	91	58
Pacific Coast, Alaska, etc.	29	7	8	25	2	11
Oceania	4	7	64	5	1	16
Asia	4	8	2	—	—	4
Central and South America	4	4	3	6	4	4
Africa	7	10	2	—	2	7
	100	100	100	100	100	100
No. of contacts	503	286	65	66	114	117

A great disparity seems to occur for the year 1935 with its 503 contacts. Some 200 of these were obtained during the A.R.R.L. DX Contest, when special valve tests were being carried out, this being the only serious time ever devoted to a contest. Allowing for this, reduces the 1935 figure to 303, giving a more accurate perspective. Furthermore, 1948 and 1949 did not permit of quite so much operating time as other years.

The Question of Power

The first question is the vexed one of power, but unfortunately the location-circumstances are so different that it is impossible to make a direct comparison between the powers used. On the question of signal-strength, however, the difference between pre-war high power with good aerials and



Typical bread-board type low-power crystal-controlled transmitter built about 1928.

the present maximum of 150 watts with poor aerials averages between 2½ and 3 "S" points, indicating a power difference of 20 to 25. Thus, discounting and ignoring the more crowded post-war band conditions, 25 times the effective power brought only three times the number of contacts, *i.e.*, a maximum of 303 as compared with 117. This, it is suggested, proves conclusively that only enormous increases in effective power (either in input or aerial arrays), far beyond the reach of most amateurs, are worth-while, and that he is not swamped-out completely by his higher-powered brethren.

Similarly, whilst no definite pattern can be traced, the "continental" distribution remains surprisingly constant for the high-power arrangements as compared with low power. For instance, the four per cent. figure for contacts with Central and South America averaged during 1935-1938 is repeated in 1948-1951, which suggests that the majority of amateurs can enjoy contacts on a completely world-wide basis; that increased power will mainly provide more contacts within the operating time (though nothing like as many more as might be expected), and definitely not more countries or continents.

The Question of Conditions

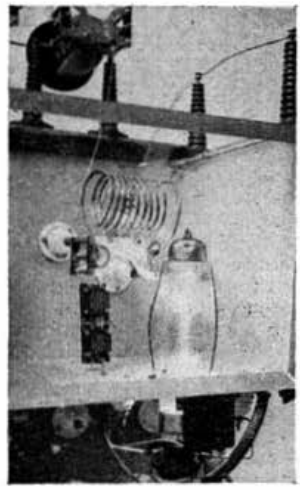
The second point is that of actual conditions. In the year 1950, 91 per cent. of the DX contacts were with North America; this was because 28 Mc/s conditions to the U.S.A. were good, when a large number were worked on n.b.f.m. On the other hand, in 1948, only 21 per cent. North Americans were worked, but 64 per cent. of the contacts were with Oceania. In 1949, 25 per cent. of contacts were with the Pacific Coast—these and the 1948 contacts being made on 14 Mc/s.

Here we can revert to the opinion of the experts. Quite accurately they forecast good 28 Mc/s conditions for the winter 1949-50, and a large number of 28 Mc/s 'phone contacts were made. They also forecast that poor 28 Mc/s conditions would follow. The amateur who consistently operated on 28 Mc/s during the latter part of 1950 or during the whole of 1951 expecting to get lots of U.S.A. contacts, was bound to be disappointed. Had he chosen other bands he would have made plenty of contacts with other parts of the world.

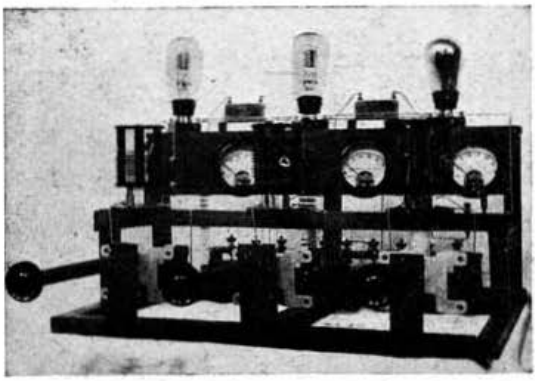
The Analysis

Looking at the general pattern over 25 years, some indication of the best periods for operation emerges from the following:

(a) The major DX "contact possibility period" falls between November and March, though this may vary from year to year. Taking 14 Mc/s as an example, U.S. signals should "pour in" from 1900-2400 G.M.T. In an exceptional year, depending on sunspots, etc., this good period will start in November and go right through to the end of March. Similar signals will come through on 7 Mc/s from around 2200 G.M.T., but will start a month later and finish a month earlier. During a bad year, DX conditions on 14 Mc/s may not start until mid-February and may last only six weeks, the time of ending being fairly consistent. The existence of this period appears to be related to the earth's magnetic field, preventing east-west contacts, but favouring north-south. There is a critical angle for this, since—for example—apart from South Africans usually being good for some weeks before this period commences, South Americans also come through. The latter are difficult to work from Great Britain because, owing to the favourable north-south conditions prevailing, Europeans are swamped by U.S.A. stations. Similarly, Pacific Coast signals often come through because they arrive from a northerly rather than a westerly direction. Variations in the magnetic conditions that favour or prevent signals from coming-in from certain directions is demonstrated by West Coast signals which peak suddenly to S8, and just as suddenly vanish, to be replaced by weak East Coast signals.



P.A. stage using a 75 W screened-grid valve. Widely-spaced components and stand-off insulators, with screening just coming into use, are typical of the equipment development period.



It was with this transmitter that G6LL made his pioneer DX contacts on 28 Mc/s with the U.S.A., October, 1928.

(b) The "summer solstice period." Between the end of the first week of June and the end of the month, a period of settled weather usually occurs, with bright sunny days, and complete lack of humidity. Pacific Coast stations come in for about three hours each morning between 0530 and 0830 G.M.T.—this DX period lasting two to four weeks according to the year. The fine weather conditions never hold, but they always herald the opening of this season. As the Pacific Coast stations drop out, those in Oceania begin to come in, continue through to August and then disappear until later in the autumn.

These general conditions are known to most amateurs, but the danger is that we are all too apt to rely on them, switching-off at other periods when the band appears dead. A truly "dead" condition on any band is extremely rare; the main trouble seems to be lack of activity, too many stations *believing* that the band is flat for DX and is therefore not worth investigating.

Thus, for example, in November, 1949, G5GQ worked W1BUD at 2330 G.M.T. amid severe QRM from thousands of East Coast stations. Around 0130 G.M.T., whilst there were still hundreds of local stations on the air, there seemed to be a slight change in conditions. A "CQ W6-W7" call brought four immediate replies. Using 40 watts, G5GQ appeared to be the only European getting across. The reason is psychological: Europeans were not expecting to work W6 then, and did not try, while conversely W6s did not expect to hear Europe, so weren't listening.

Quarter Century of DX

When preparing these notes, the writer was asked to make comparisons with the very early days around 1924, when, on ten watts, amateurs used to work much of the present DX. Unfortunately, space does not permit an adequate survey to be made, but the following brief review highlights the main features of the past twenty-seven years.

From any analysis, three absolutely distinct operating periods appear; these are:

1924-1930.—This period saw "the dawn of international DX." It was the time of the self-excited transmitter, and the "low-loss" two-valve receiver. To work a station outside Europe was an achievement and the aim of every amateur. The writer's log records ten contacts with the U.S.A. during one night on 46 metres, using less than ten watts. The bands were fairly unoccupied, signals rare, and even an S3 signal would produce an answer. It meant sending double at 8 w.p.m., but so long as the call was confirmed, one was satisfied. There were exceptions, but that was the general picture.

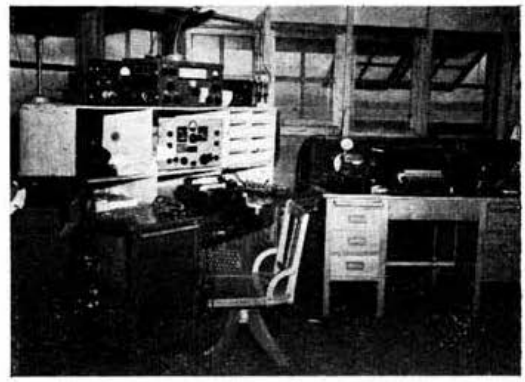
1930-1939.—This was the "equipment development" period, during which crystal-controlled transmitters and single-signal superhets came into general use. Consistent long-distance amateur communications resulted; readability approached 100 per cent., and regular schedule operation came into being.

Post-war.—This has been the v.f.o. cum-aerial-array period, with Amateur Radio achieving wide recognition (remember that before the war we in the U.K. held experimental, not amateur, licences). Both aerial arrays and v.f.o.'s are very mixed blessings. The aerial array tends to concentrate operation on certain bands and in certain directions and militates against the wider use of bands. This is one of the causes of the apparent "deadness" of 80 m and 40 m at the present time as compared with earlier days.

Looking back over those twenty-seven years, insufficient experience has been acquired to compare DX conditions then with now. There are probably cycles taking hundreds, if not thousands, of years, compared with which our small lunar and sunspot cycles are only local (in time) variations. But—and it's an important but—the past 27 years of development in short-wave communication have also witnessed the development and increased use of electrical equipment. The sensitivity of modern receivers is limited by background noise, and when the number of vacuum-cleaners, refrigerators, small motors, etc., that have come into general use during these years is considered, then the *effective* sensitivity of the 1925-1926 "low-loss" two-valve receiver was probably higher on 40 and 80 metres than the modern, sensitive, superhet of today.

Three Point Plan

All that is past; we must look to the future. Since the war, with the introduction of the amateur licence, the movement has grown enormously. The post-war period commenced with peak conditions, which are now returning to average, and it is up to all amateurs to treat them that way and assist those who have only known post-war conditions to obtain the greatest enjoyment from their hobby.



World-famed call JA2KW has frequently provided a much needed DX contact to aspirants for DX C.C. Equipment includes Collins 75A1 and Hammarlund HQ129X. The transmitter is a BC610.

So, from the statistics of the past—to the future. What can be done to get more profitable use of our bands, greater enjoyment of our hobby, giving all—whether high or low power—a better chance? Here are some suggestions:

(i) To encourage a more optimistic attitude by coming on the air, if only for a few minutes, when conditions seem quite flat.

(ii) To promote greater use of the amateur frequencies by not adhering to one band only and closing down if it seems to be flat; but to give the other bands a chance and encourage all stations to spread their operation.

(iii) To feature a "Band Activity" section in the BULLETIN, to which volunteers could contribute a monthly return of stations worked in each continental group, including times of day and the wavebands used. From this data a chart could be prepared each month summarising DX activity. This, the writer believes, would do more to encourage wider use of the various bands than any other measure, and would provide a more accurate forecast, for amateur purposes, than any at present available.

Finally, if this article only provokes a little thought and co-operation, we shall have gone far towards a solution.

Results

TOP BAND CONTEST
—JANUARY, 1952

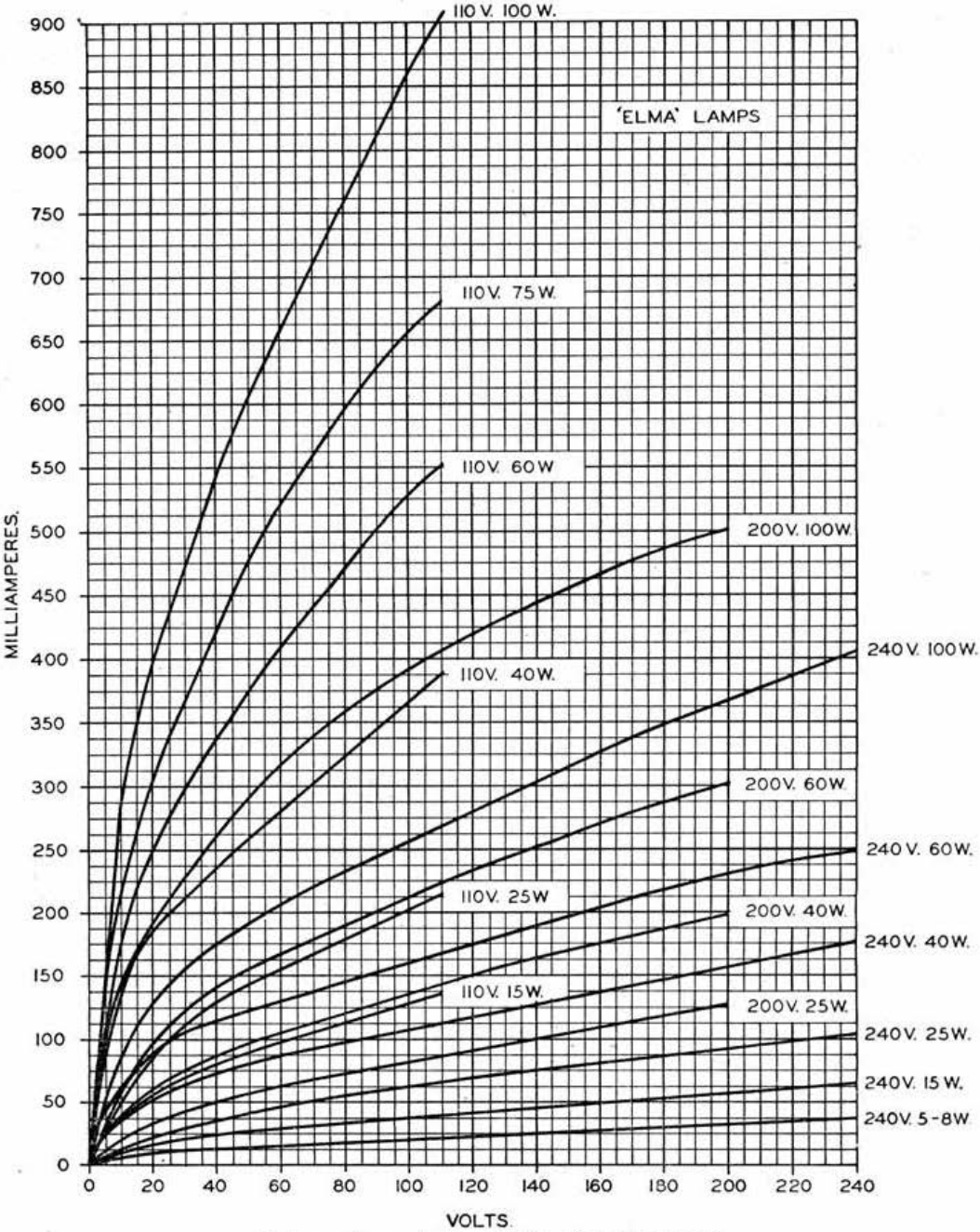
1.—D. E. Davies (Region 10) (GW3FSP)	184 pts.
2.—J. C. Foster (Region 8) (G2JF)	174 pts.
3.—P. R. Golledge (Region 5) (G3EDW)	169 pts.

Full report next month.

USING LAMPS AS RESISTANCES

By D. N. CORFIELD, D.L.C. (Hons.), A.M.I.E.E. (G5CD)*

IT is not generally appreciated that lamps may be conveniently employed as resistors of high-wattage dissipation and as a means of measuring the power output of a.f. and r.f. amplifiers. In response to numerous requests a graph (originally published in the January, 1937, BULLETIN) showing a series of curves plotting voltage against current for most of the standard lamp sizes is reproduced below. The curves relate to gas-filled lamps made by members of the Electric Lamp Manufacturers' Association (E.L.M.A.), and do not necessarily apply to cheap imported lamps. It will be apparent from the graph that the resistance of a lamp does not follow a straight-line law, but the resistance or wattage dissipated for any voltage or current can be readily determined.



Voltage and current characteristics of gas-filled lamps

Lamps as Resistors

When a high-wattage dissipation resistor is required, a suitable lamp or lamps can be conveniently used for this purpose. They are relatively cheap, and have the added advantage that should they become open-circuited, or should the supply voltage fail, they indicate the fact in an obvious manner. If, for example, a pair of valves require a common bias resistor of 500 ohms to pass 100 mA., then a lamp taking 100 mA. at 50 V. would be suitable. Reference to the curves will show that a 110-V. 15-W. lamp should be the correct size.

Due to the fact that lamps when cold will pass a heavy initial surge current, they should not be used in series with valve heaters or filaments in place of the normal mains-dropping resistor. A valve heater is somewhat sensitive to heavy current surges, and it is recommended that lamps should not be so employed unless a suitable surge-limiting device is also incorporated in the circuit. Such devices are semi-conductors having a high negative-temperature co-efficient of resistance, and are commonly known as *thermistors*, being marketed in various current ratings under commercial names such as *Brimistor, Varite* or *N.T.C.*

Measurement of Power

In general, all amplifiers, whether a.f. or r.f., are designed to deliver their power into some known impedance for the purposes of matching. If lamps of suitable size are available, with a resistance of the same order as this impedance, then they may be used quite successfully as an artificial load at frequencies up to about 150 Mc/s. (and—with some reservation—at 420 Mc/s.). Thus, a transmitter designed to work into a 300-ohm feeder to give an output of 75 W. would need a 200-V. 100-W. lamp as an artificial aerial, its resistance being 340 ohms at this power. Again, a modulator providing 75 W. into 5,000 ohms could be adequately tested with three 200-V. 25-W. lamps in series as the load in place of the p.a.

There are two ways of using a lamp or lamps for measuring power—one electric, the other photometric. The current through the lamp may be measured by means of a hot-wire or thermocouple meter, or, alternatively, the voltage across it may be measured with a valve voltmeter, the watts being calculated by reference to the curves. If no r.f. measuring instruments are available, however, the measurement may still be made by photometric methods. The simplest is to set up a similar lamp about three feet away, supplied with d.c. or a.c., whose voltage or current can be adjusted and measured with ordinary meters. A sheet of paper with a grease spot in the centre (a grease-spot photometer) is placed exactly halfway between the two lamps. The second lamp is adjusted in brightness until the grease spot is no longer visible, at which point the current or voltage may be read from the meter, reference to the curve giving the power in either lamp, since the two are now equal.

Alternatively, a photographic exposure meter may be used instead of the photometer to adjust both lamps to a similar brightness. As a refinement, the exposure meter can be calibrated by means of a given lamp lit from d.c. or a.c. to read watts directly, providing the same lamp is then used for the r.f. or a.f. load at the same distance away.

For use at r.f., it is advisable to dispense with the lamp-holder and solder directly on to the cap. For v.h.f. working, the lamp cap may be removed if desired, in order to shorten the connections (though the capacity in the cap is small compared with that in the pinch of the lamp).

Certain types of lamp, when used at 420 Mc/s., will be found to have a standing-wave on the filament, evinced by the fact that the filament is of uneven brightness. Under these circumstances the impedance is unlikely to be near the expected value, and measurements may be unreliable.

Apart from this special case, measurements by means of lamps can be accurate within about 10 per cent. In any case, the use of lamps provides a cheap and easy method of comparing the output of one piece of apparatus with another.

* *20 Hoop Lane, London, N.W.11.*

A Simple Audio Filter

INFORMATION regarding a source of supply for the toroidal inductance forming the basis of the audio filter described on page 303 of the January issue, would be welcomed by the author, Mr. T. G. Hull (G3FIE), Heatherbrae, Heath End, Farnham, Surrey, who has received a number of enquiries from members. This component, which was generally available a few months ago, is now difficult to obtain.

Side Slip

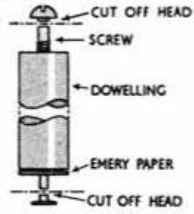
THE author (Mr. D. Woods) has drawn attention to a small misprint in the Appendix to his article "The Collins Coupler," published last month. Equation (A9) should read :

$$R_L'' = \frac{2\omega^2 L^2}{R_S} = 2R_L'$$

Gadget Corner

A PAINTED chassis may look very nice when the gear has been built, but it has one definite disadvantage—the need for careful scraping wherever an earth connection has to be made.

The gadget illustrated simplifies this task and produces a neat circular area of burnished metal just where the solder tag is to be secured to the chassis, instead of the usual area of irregular scraping that occurs when a wire scraper or emery paper is used.



A short length of dowelling, a screw and a nail combine to make a useful gadget for preparing chassis earth points.

The method of construction is as follows. Take a length of wooden dowelling about 2 in. long and ¾ in. in diameter, and drill a small hole in each end. Into one hole, screw an ordinary wood screw, leaving about an inch projecting, then cut off the head so that the remaining part can be held in a small drill. Drive a nail into the other end and cut off the head. Finally, cut a circle of emery paper of the same diameter as the dowelling, and pass it over the nail, sticking it securely on to the wood with the aid of "Bostick" cement.

The device may be used when a hole has been drilled in the chassis for an earth tag. With the screw end firmly gripped in the drill, put the nail through the hole, press lightly on the chassis, and rotate the dowelling a few times. A bright circle of clean metal will result. A quicker action can be obtained by damping the emery and sprinkling a little powdered emery or sharp sand on it.

R.J.D.

CLAPP v. COLPITTS

The Discussion Resumed

The majority of readers reacted favourably towards the technical discussion on the subject of " Clapp v. Colpitts " which appeared in the October, 1951, issue. In recent correspondence, a number of new points have been raised which clarify and complete previous arguments. This month " Technical Forum " again presents a cross-section of members' opinions.

BEFORE continuing the discussion, it is necessary to clear up one or two obscurities which appeared in the previous instalment of this feature. Alan G. Dunn, G3PL, author of the article which started the controversy ("A Compact 7 Mc/s. V.F.O.," in the January, 1951, issue), points out that "some confusion seems to have arisen because Lt. D. Deacon, G3BCM, referred to the 'anode' in the Clapp circuit without making it clear that he meant the actual anode electrode of the pentode valve, and not the electrode which was acting as the anode of the triode oscillator —*i.e.* the screen grid. His point was that in the Clapp circuit, the cathode, control grid and screen grid of the pentode (or tetrode) valve form the oscillator 'triode,' while the anode is free to act as an 'output electrode'; whereas the Colpitts circuit employs a triode valve, and hence no independent output electrode is available. These assumptions are not necessarily true, however."

G3PL adds: "It is not made clear that Fig 1a does not show the method of frequency variation used in my v.f.o. design, or that Fig. 1b is not the 'accepted' form of the Clapp circuit, but is my derivation from the usual form. Most designs employ a variable series capacitance to alter the frequency, as in the original article 'High Stability Oscillator Circuit,' by G. Grammar, in the May, 1948, issue of *QST*."

A 1.7 Mc/s. COMO Exciter

D. P. J. Mead, G3IDM (whose name was incorrectly spelt last time), points out that the circuit diagram of his 1.7 Mc/s. COMO exciter should have shown a connection between the 0.005 μF. coupling condenser from the anode of the v.f.o., to the grid of the cathode-follower. The correct circuit appears in Fig. 1c above. He also provides further information about this exciter.

The coil L consists of 24 turns of No. 18 s.w.g. enamelled wire on a *Denco* ribbed polystyrene former, while the tuning condenser is a two-gang 0.0003 μF. midget with perspex cover, as used in personal radio receivers. This combination of L and C just covers "Top Band." The coupling condenser between the v.f.o. and the cathode-follower has been reduced to 500 $\mu\mu$F. to improve stability.

The valves used are a 6L18 for the v.f.o. and a 6J5 for the cathode-follower. Incidentally, a 6J5G is preferable in the latter position, as, for some unknown reason, a metal valve introduces a keying chirp. Greater economy in space could be effected by combining v.f.o. and cathode-follower in one valve, using a double triode.

Series or Parallel Resonance ?

Referring back to the question of whether the tuned circuit of a Clapp oscillator is at series or parallel resonance, G3PL has this to say: "The question is very important, but quite easy to clear up. In Fig. 1d, L and C resonate at a particular frequency, namely—that at which their reactances

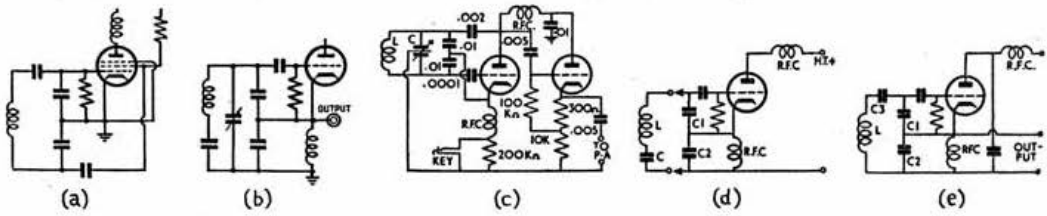


Fig. 1
(a) Modified version of Clapp oscillator (by G3PL); (b) the Clapp oscillator circuit; (c) 1.7 Mc/s. Como exciter (by G3IDM); (d) basic Clapp or Gouriet oscillator, showing series L.C. circuit; (e) earthed-anode version of Clapp oscillator.

are equal and opposite. At this frequency, therefore, there is a very low, purely resistive shunt between the top of C1 and the bottom of C2. It should be easy to see that no amount of reactance connected across the series-resonant circuit can alter the frequency of series resonance—it takes reactance in *series* with L and C to do this, as anyone who has had experience of wave-traps, T.V.I.-filters, etc., employing series-resonant circuits will appreciate. Consequently, my method of varying the frequency of the 7 Mc/s v.f.o. (January, 1951, issue) cannot work if the frequency of oscillation is determined by the series-resonant frequency of L and C. But, in fact, the method *does* work, proving that the frequency is not determined by series resonance.

"Consider the phase of the voltages in the grid circuit of Fig. 1d (incidentally—the anode of the valve should be connected by a blocking condenser to the negative h.t. line, as shown in Fig. 1e, or the circuit will not oscillate). Both the Clapp and Colpitts oscillators depend on the tuned circuit for the 180-degree phase-shift in voltage between anode and grid necessary to produce oscillation. This phase reversal is characteristic of a parallel-resonant circuit, but does *not* take place in a series-resonant circuit, in which the inductance causes the voltage to lead by 90 degrees on the current,

while the capacitance causes it to lag by the same amount, so that the resultant phase-shift is zero. The circuit cannot, therefore, oscillate at the series-resonant frequency.

"At frequencies higher than resonance, the reactance of L is greater than that of C, so the two elements have an overall inductive reactance which increases as the frequency increases—in fact, at any one frequency, the series circuit acts as an inductance of a definite value. At one particular frequency, this effective inductance resonates with the total capacitance between the top of C1 and the bottom of C2 in Fig. 1d, producing parallel resonance, and the required phase-shift for oscillation. The circuit therefore oscillates at the parallel resonant frequency, which is higher than the series resonant frequency of L and C. If L is very large, and C is small (as they should be), the difference between the two frequencies is also very small. The position is actually rather more complicated, but the above explanation presents a sufficiently true picture without pedantic hair-splitting."

Frequency Stability

Fresh comment on the subject of stability is provided by Basil Wardman, G5GQ, who states: "In all feed-back oscillators, whether Hartley, Colpitts, Ultra-audion, or whatever type, there are two principal and interlocking factors which must

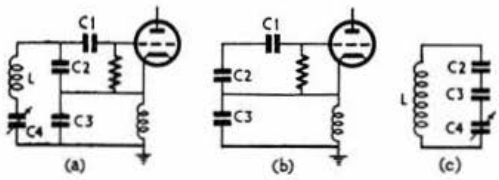


Fig. 2

(a) The accepted series-tuned Clapp circuit; (b) capacity arrangements in grid circuit of (a); (c) the effective capacity of the circuit is the sum of three capacitances in series, and is, therefore, less than the smallest component capacity.

be taken into account, namely—frequency drift due to heating-up, with consequent change in actual valve capacities, and the need for a high-"Q" frequency determining circuit, *i.e.* a high L/C ratio. The best, so far, is the crystal, which is almost entirely L.

"The small change in valve capacities due to heating-up has, in the past, made a considerable difference to the frequency of an oscillator using high L/C circuits. So, for many years we have been using large tuning capacities in conjunction with comparatively low inductance to obtain stability (*e.g.* on 7 Mc/s. parallel capacities of 0.001 μF. have been common practice). The oscillator would work perfectly well with more inductance and less parallel capacity (*e.g.* 50 $\mu\mu$F.), but its frequency stability would be poor, because the inductance would be "swamped" by valve capacities.

"Gouriet, or Clapp, whichever it was, has gone to the root of the trouble in a brilliantly simple manner. Fig. 2a shows the conventional Clapp circuit, and Fig. 2b shows the grid arrangements of the same circuit, where C1 is the normal grid condenser, and C2 and C3 comprise the feed-back circuit. They also serve to swamp-out the capacity-heating effects of the valve-electrodes—grid to cathode, grid to earth, and cathode to earth. These valve capacities are about 5 $\mu\mu$F. each, compared with the condenser values of 100 and 1000 $\mu\mu$F. respectively. The large capacities which we once used across the inductance have been transferred to the real seat of the trouble, so that small variations in valve capacities have negligible effect on frequency, enabling a high L circuit to be used (Fig. 2c).

"In effect, the inductance is tuned by one small parallel capacity comprising C2, C3 and C4 in series. If C2 and C3 are 1000 $\mu\mu$F. each, and C4 is 100 $\mu\mu$F., then the effective maximum tuning capacity is around 90 $\mu\mu$F. This is one tenth of the value normally used for oscillators, which explains why more turns can be added to the coil.

"The real purpose of C4 is to act as a coupling condenser: tuning is ancillary. There is, therefore, a minimum value for C4, as also for the other coupling condenser, C1. For amateur frequencies, such as 1.7, 3.5 or 7 Mc/s., this is about 30 $\mu\mu$F., below which value oscillation is uncertain. If C4 be omitted, we come back to the accepted Colpitts circuit, which works perfectly well—the effect being to increase the parallel tuning capacity (in the example quoted) from 90 $\mu\mu$F. to 500 $\mu\mu$F., causing a drop in oscillator frequency from 1700 kc/s. to about 1100 kc/s."

A Question of Drive

A practical point is emphasised by G3IDM, who writes: "All correspondents on this subject seemed to have missed the fact that the drive from a Colpitts or COMO oscillator does not vary much over a given band, whereas the Clapp circuit provides optimum drive for only one set of conditions, and unless the series and parallel capacitances are varied simultaneously, the drive falls-off rapidly. While this may not be a serious drawback for the average amateur, it must nevertheless be borne in mind. I regard the Clapp as a crystal substitute, in fact as well as in name, and consider it as a more-or-less fixed frequency oscillator, variable over only a small band of frequencies."

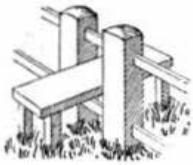
Infinitely Stable Oscillator

An interesting possibility is revealed by G3PL, who points out that "this discussion contains a red-hot tip on how to make an infinitely stable oscillator. If a circuit can be produced which really does operate at the series-resonant frequency of L and C, then no external influences (valve changes, stray capacitances, supply-voltage variations, etc.), can have any effect whatever on frequency!" But—can it be done? He has tried two or three schemes, but none have worked. The Butler circuit is claimed to be successful, but he has not tried it yet.

Terminology

Finally, a note by G5GQ on oscillator terminology: "To decide the question of whether the Clapp circuit is fundamentally a Colpitts oscillator or not is purely a matter of opinion. In other fields there are many different accepted circuits derived from a few basic ones. For instance, the standard crystal oscillator and the T.A.T.G. are the same, the essential difference being that the former uses a very high-'Q' circuit in the grid. The fact that this happens to be a 'mechanical' circuit does not affect the issue, because, if we could find an electrical substitute, we would certainly not call it a T.A.T.G. again, but choose some other title! Since that is practically the measure of difference between the basic Colpitts and the newer Clapp-Gouriet arrangement, I contend that there is a precedent for differentiating in this case also."

THE HELPING HAND TO AMATEUR RADIO



Part IX.—Correcting a "rough" Transmitter Note

By
B. W. F. MAINPRISE
B.Sc. (Eng.), A.M.I.E.E. (G5MP)

AS a result of the modern trend towards variable frequency operation as opposed to crystal control, many present-day telegraphy transmissions are inferior to those of the pre-war era. Every operator should take a pride in keeping his transmitted note free from any blemish of roughness or chirp, and how this may be achieved will be considered in some detail in this and the next article.

A poor note is invariably due to inadequate design or stability in the transmitter, and a complete check of all stages is desirable. The first step in systematic testing is to prepare a circuit diagram *from the transmitter chassis itself*. Each connection must be traced, and the labelled value of every component recorded. A beginner will frequently assert that the wiring has been checked and found in order, but a thorough examination by an experienced operator will usually disclose an error—for instance, a grid-leak connected to the wrong side of its associated grid condenser; screen and suppressor grid connections transposed; or even resistors of incorrect value due to wrong colour-code identification.

While tracing the wiring of the circuit, a note should be made of any leads which could be shortened, and of any components (particularly r.f. decoupling resistors and condensers) which could be more judiciously located in order to reduce the length of the connecting wires. Many l.f. chokes bear no markings of their inductance, while the capacitance of electrolytic condensers of unknown date may be much less than their nominal value; these and similar items should be queried on the diagram, so that they can later be measured and tested.

Checking the Note

When the tidying of the wiring and the preparation of the circuit diagram have been completed, equipment to monitor the transmitted note must be considered. Ideally, it should comprise a highly stable totally screened oscillating detector, covering all the transmitter wavebands, powered by internal batteries, with only the headphone leads (suitably filtered against r.f. pick-up) entering the screening-box. Unfortunately, such a piece of apparatus is not likely to be available unless it takes the form of a heterodyne wavemeter.

A receiver may be used instead, however, provided that adequate precautions are taken against excessive r.f. pick-up. It may be advisable to move both receiver and transmitter temporarily to the vicinity of a ground-floor window, so that each can have a short earth-lead to its own earthing-rod. The aerial and earth terminals of the receiver should be strapped together. Separate points of connection to the mains supply are preferable—*e.g.* a floor socket for the transmitter and a ceiling pendant for the receiver. The latter may require a mains r.f. filter consisting of two chokes—each comprising 100 turns of No. 18 s.w.g. d.c.c. wire, wound on a ½-inch wooden dowel. One choke should be inserted in each mains lead, and should be by-passed to earth at both ends by 0.003 μF mica condensers.

Some receivers tend to give a tone-modulated note to a strong incoming signal when the r.f.-i.f. gain control is turned well back. This possibility must be checked before carrying out tests on the transmitter.

Analysis

With the monitoring equipment in readiness, the transmitter should be switched on, and the defective note carefully studied for the following points:—

(a) Is the roughness present on all wavebands, or confined only to a few?

(b) Is it affected by the tuning of any particular stage?

(c) Is it affected by the aerial coupling, or by coupling the exciter to the final stage?

(d) Does the anode and grid current of any one stage show an abrupt change at some off-resonance setting?

These observations should be written down for future reference, as they will often enable certain common sources of trouble to be exonerated in a particular case, so that attention can be concentrated on a narrowed field of search.

Roughness of note may, in general, arise from eight distinct causes:—

(i) *Insufficient smoothing of anode supplies.*—This can be checked by adding externally a choke of known inductance (around 20 H) and a freshly manufactured 16 μF electrolytic condenser. It should be noted that many war-surplus chokes have an effective inductance of about 8 H or less, which is too low a value. Where insufficient smoothing is encountered, it is generally more economical to use the choke only in the lead supplying h.t. to the oscillator and subsequent stage; provided that the oscillator supply is really pure d.c., relatively little smoothing may be found necessary in the higher-powered stages.

(ii) *Heater-cathode capacitance or leakage in the oscillator valve.*—This is of consequence only in circuits such as the e.c.o., where the cathode of the valve is taken to a tap on the grid coil and thus operates at r.f. potential, or where the cathode lead includes a series r.f. choke. It does not arise if the cathode is earthed directly or *via* a suitably by-passed bias resistor. The quickest test is to disconnect the heater tags on the valve-holder from the l.t. supply wiring, substituting two heavy leads connected to a freshly charged car accumulator, so that the heater is running from a d.c. supply. (Note that many valve types are sensitive to heater voltages falling below the rated 6.3 or 4 V.)

If this test cures the trouble, then a rectified and smoothed d.c. heater supply should be provided, using a half-wave rectifier (shown as X in Fig. 1)

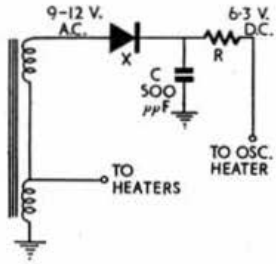


Fig. 1. Method of obtaining rectified and smoothed d.c. heater supply for oscillator stage.

followed by a 500 μF 12 V smoothing condenser (C). The input voltage to the rectifier should be about 50 per cent higher than the required output voltage, and may be obtained from half of a spare winding on the mains transformer. A voltage-dropping resistor, made from a few inches of the element wire from an electric fire, may be necessary for voltage adjustment; but control of input voltage to the rectifier is preferable. The current in the heater winding will be about 2.5 times the valve heater current.

If a full-wave bridge-connected rectifier be used, the winding current will be about 1.5 times the heater current, but neither side of the winding can then be earthed. Again, an input voltage some 50 per cent higher than the required output voltage is necessary.

Alternatively, a.c. may still be used for the heater supply if chokes are inserted in the leads, as shown in Fig. 2. Allowance should be made for any

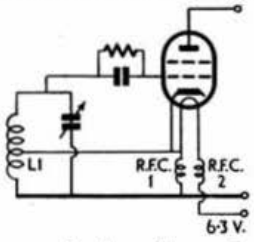


Fig. 2. Operation of oscillator heater at same r.f. potential as cathode. (R.F.C.1 may be omitted, and R.F.C.2 replaced by a coil interwound with, and having the same number of turns as, L1.)

voltage drop which may occur in these items. In this way the heater will operate at the same r.f. potential as the cathode, and leakage or capacitance effects will be negligible.

(iii) *Vibration of coil turns.*—This may be readily checked by giving the coil mount a "rap" with a pencil—a brief musical ping should result. If the note becomes "fuzzy," then the coil turns must be secured by applying a low-loss adhesive such as polystyrene cement. (Note that adhesives consisting of celluloid dissolved in amyl-acetate may cause appreciable reduction of output on frequencies above 7 Mc/s unless applied sparingly.)

(iv) *Electrostatic injection of hum voltage.*—This affects audio-frequency rather than radio-frequency circuits. Heater wiring should be kept away from grid-circuit wiring and components, the latter being connected directly across the actual tags on the valve-holder, using the shortest possible leads. Screening may assist to some extent.

(v) *Electromagnetic injection of hum voltage.*—Special care should be taken to ensure that grid-circuit wiring does not form an open loop which may be cut by the alternating field from a transformer, choke, or heater wiring. Outgoing and incoming leads should run close to each other, and all connecting wires should be as short and direct as possible. Screening will have a negligible effect on 50-cycle electromagnetic fields, unless mu-metal or some other expensive alloy is employed.

(vi) *Poor earth-return paths.*—These may often be located by touching the mounting brackets of coils and condensers with a pocket screwdriver (insulated except for the tip of the blade), and noting whether any change in beat-note results. Care must be taken to avoid electric shock when probing into "live" circuits; the operator should use one hand only, keeping the other behind his back or in his pocket. Suppressor-grid and heater tags on valve sockets should be similarly tested for change in beat-note. All earth-returns should be brought to a single point—normally adjoining the cathode-tag on the valve-holder. Copper strip instead of wire may be preferable for the major r.f. return paths. Mica (not paper) by-pass condensers of about 0.003 μF are satisfactory for screen, suppressor and other positions, provided that the leads are kept short. If any increase in capacity is found necessary, it may be desirable to use a small capacitance in parallel with a larger one, especially when u.h.f. voltages are present.

(vii) *Parasitic oscillation.*—This consists of unwanted or spurious oscillation at a frequency (or frequencies) other than that to which the transmitter is tuned. It may occur at a low frequency (*i.e.* in the long or medium wave band) due to resonance of a choke with a by-pass condenser or stray capacitances forming an oscillatory circuit. For this reason, chokes should be omitted where possible; for example—at normal frequencies a grid-leak resistor of more than 10,000 ohms should not require a choke in series with it.

More commonly encountered, and harder to eliminate, is parasitic oscillation at ultra-high frequency. This may arise through resonance of the valve's internal leads with stray capacitances or with by-pass condensers. Alternatively, the leads from the valve to the grid and anode tuned circuits may, through their inherent self-inductance and self-capacitance, form an oscillatory circuit. Such oscillation can usually be damped-out by means of "stopper" resistors (value around 50 ohms) connected in the leads immediately adjacent to the valve pins or valve cap. In place of resistors, small chokes (consisting of a few self-supporting turns of wire, wound to the diameter of a pencil) are often successful, and frequently chokes and resistors are used in parallel.

Parasitic oscillation may also occur at the screen or suppressor electrode of a valve. "Stopper" resistors should then be tried next to the appropriate tag on the valve-holder (*i.e.* between the tag and the by-pass condenser with its associated voltage-dropping resistor, if any). Unfortunately, this will impair to some extent the by-passing at the operating frequency, possibly resulting in self-oscillation of the stage. Dual or triple by-pass condensers of different values are often used to eliminate such u.h.f. parasitics.

Spurious oscillation of this type is common in tetrodes such as the 807. In extreme cases, where the power rating permits the change, it may be

desirable to try alternative valve types (*e.g.* 2E26 or 2E22 pentode).

(viii) *Self-oscillation.*—This may occur in an amplifier stage when the grid and anode circuits are tuned to the same frequency; it does not normally occur in doubler or tripler stages. The tendency towards self-oscillation in a stage may be examined by removing the drive from the grid circuit, and reducing the bias until anode current flows. On tuning the grid and anode circuits, a sudden change in the anode current accompanied by a flow of a grid current, will indicate the presence of oscillation.

Adequate screening between grid and anode components is essential; the only remaining feedback path should then be *via* the grid-anode capacitance of the valve, and neutralisation should result in complete stability. The usual circuit for neutralisation was described and illustrated last month.

Where a single-ended stage (in which no provision for neutralisation was originally made) proves slightly unstable, it may be readily neutralised by the addition of a small pre-set capacitance Cn (Fig. 3) wired between the valve

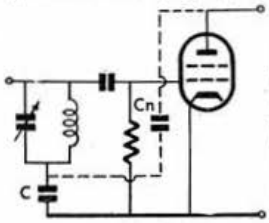


Fig. 3.
Neutralisation of a single-ended stage by the addition of a small pre-set capacitance, Cn, connected between valve anode and the driver tank - circuit by - pass condenser C *(See text.)*

anode and the r.f. by-pass condenser C of the previous tank circuit. This system is due to Warren Bruene (*CQ*, August, 1950), and the writer has found it excellent in practice. The operation of the circuit depends upon the correct ratio of *Cn* to *C*. Since the former is effectively in parallel with the tank tuning condenser, it should be limited in value to about 5 $\mu\mu$F. The corresponding value of *C* may be derived from the following formula:—

$$\frac{Cn}{C} = \frac{Cga}{Cgf}$$

where *Cga* is the valve anode-grid capacitance, and *Cgf* is the valve input capacitance, together with the wiring and stray capacitances and the output capacitance of the driver valve (where condenser coupling is used). If valve tables are not available, a total of about 30 $\mu\mu$F may be assumed for *Cgf*.

Taking the example of an 807 p.a. valve driven by a 6F6, it will be found that $Cga = 0.2$ $\mu\mu$F, and $Cgf = 11 + 10 + 13 = 34$ $\mu\mu$F. Selecting a convenient value of 5 $\mu\mu$F for *Cn*, and substituting these figures in the equation above, it is found that $C = 850$ $\mu\mu$F. The nearest standard value—0.001 μF—would be employed in practice, with a correspondingly slight increase in *Cn*. For power inputs of up to 25 watts, a Philips concentric trimmer of the air-dielectric type will be found satisfactory.

LONDON LECTURE MEETING

The last London Lecture Meeting of the season will be held at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, on Friday, March 28, 1952. Buffet Tea from 5.30 p.m. Meeting commences at 6.30 p.m.

Speaker: Mr. H. A. M. Clark, G6OT

SUBJECT: MICROPHONE ACOUSTICS FOR THE RADIO AMATEUR.

It's Topical

The many friends of Council Member **P. W. (Bill) Winsford, G4DC,** will be pleased to hear that he has been appointed Head of the Marion Richardson Junior Mixed School, Stepney, London.

Mr. E. J. R. (Jack) Cowles, G3AJU—the Society's County Representative for Suffolk—was last month elected President of the **International Short Wave League.** Jack is an ardent exponent of QRP, a diligent worker in the cause of Amateur Radio, and an authority on the "Constable Country." In extending congratulations to him on his preferment, his many friends in the Society also offer best wishes for the continued success of I.S.W.L.

"Suppress Television Interference" is the title of an illustrated pamphlet now being distributed with renewed car licences by the Road Fund Authorities. Published by the G.P.O., it appeals to users of motor vehicles to have suppressors fitted to the ignition system of their engines, and uses two photographs of a television picture (captioned *before* and *after*) to illustrate the devastating effects which can be produced by an unsuppressed vehicle. The moral is—in amateur parlance—T.V.I.-proof your car!

Calling S.J.A.B. again—a regular sked takes place every Sunday morning at 1100 G.M.T. on 1733 kc/s between G3IDG (ex-B.R.S. 12474) and G3IDF, who have served 9 and 8 years respectively in the 104th Balham and Tooting Division of the **St. John Ambulance Brigade** (see *QUA* in the April, 1951, BULLETIN, and following issues). They invite other members of the Brigade to join them on the air, or to forward reports.

R. F. Pilkington, G3IAG, who is serving as a Radio Officer on the *M.V. Apapa,* sailing between Liverpool and Lagos, Nigeria, would be pleased to hear from other G-licensed amateurs who are **maritime operators.** He mentions that while in Lagos recently he heard G5JU (Birmingham) on "Top Band."

The **loftiest television station** in the world is to be located at Cortes Pass, Mexico, 12,500ft above sea level (mid-way between the two famous volcanos Popocatepetl and Ixtlachuatl), and will function as a 2500-watt slave satellite of XHTV, the 5000-watt television station of Mexico City. . . . Two types of **u.h.f. sweep generator** for visual alignment of u.h.f. equipment, and having a *fundamental* frequency range of 470 to 890 Mc/s, are being produced in America by R.C.A. . . . **Nina Barrett, G3GYL,** blind YL radio amateur, was heard by listeners to the B.B.C. Home Service recently when she took part in a special broadcast commemorating the birth of Louis Braille. . . . **5,798 hours** of B.B.C. programme material was used by U.S. radio stations and networks last year as compared with 2,143 hours during the previous year.

Historical Documents

THE General Secretary would be pleased to hear from any member who is willing to loan or donate any documents bearing on the early days of Amateur Wireless in the United Kingdom. In particular he is anxious to obtain copies of the *English Mechanic and World of Science* (issued prior to 1914), copies of *The Marconigraph* (predecessor of *Wireless World*), early text books, directories of call signs, and copies of early licences.

DX TOPICS

THE MONTH ON THE AIR

by A. O. Milne* G2MI

Retrospect

THE month of February, 1952, will long be remembered for some of the worst DX conditions experienced in recent years. Apart from the 14th and 15th (when the most unusual things happened), the main DX bands consisted of "hiss and locals." On one or two evenings for short periods, South African signals were good but unreliable, the best being several appearances of ZS7C at S9 'phone and an excellent signal from ZD9AA, now operating with 500 watts on 'phone. On the two days mentioned above, everything seemed to come in at S9 but at the wrong time of day—*e.g.* ZL3JD at midday, KL7 at 2 p.m. and a CE at 4 p.m. American signals stayed until well after 9 p.m., there being no sign of the roaring noise which usually arrives to drown everything around 7 p.m.

"Top Band"

It is a pleasant relief to record the happenings on the "Top Band," in contrast to the general air of frustration which characterised the normal DX bands, in particular 7 Mc/s.

G2YY of Berwick-on-Tweed succeeded in making the first G contact with Cyprus when he worked ZC4XP on 1830 kc/s at 2130 G.M.T. on February 23. On the same day, he also worked OH3NY, OH3PK and OH7OH. The contacts have been confirmed. On February 16, at 2300 G.M.T., G4AU and G6HD were heard by SU1XZ in Ismailia, both stations receiving reports of 339.

GD3UB, on the other hand, gave his attention to North America, and between 0657 and 0830 worked W2QHH (whom he has now contacted on five bands), 459; W1HSC, 569; W2MX, 569; W4ATC, 559, and W1EFN, 579. B.R.S. 17241 (Aldershot) copied both W1BB and W1LYV, while B.R.S. 250 (Thornton Heath) logged the following: January 20—W1, 2, 3, 4 and 9; February 17—W1, 3, 9, VE1, 2 and KV4AA (who was in contact with W9CVQ on 1996 kc/s). VE2WW—his first VE2—was in contact with GW3ZV, who also worked VE1EA and W9NH. G5JU worked VE2WW and W9NH.

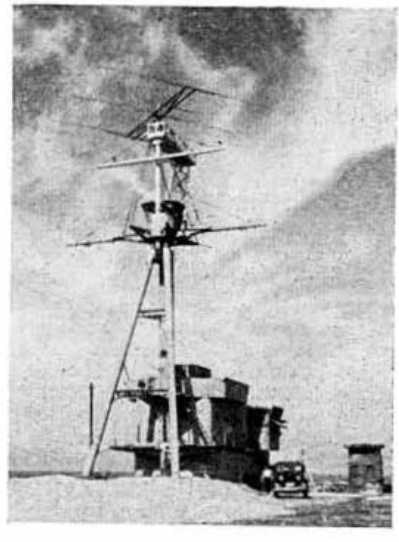
ZL1AH, who reports that his contacts with the U.K. were made with an input of 100 watts to a two-element fixed beam, states that W9CVQ is using a top-loaded vertical. He comments that receiving conditions on this band are vastly better in New Zealand than in the U.K.

Notes and News

VP8AP is now at Port Stanley, the new call for South Orkney being VP8AE. A large number of QSL's from VP8AP have been distributed by the R.S.G.B. QSL Bureau during the past few weeks. He is running 60 watts to a modified Bendix TA12B. GC3HFE does not echo the complaints of those farther north regarding the 14 Mc/s band, but considers 7 Mc/s more interesting with CR5 as the best DX. In his opinion, one of the most difficult places to contact from the Channel Islands is the mainland of Great Britain. He has worked ZL3OX on 7010 with his very efficient 9 watts, and reports that SU1MR hopes soon to be active once more. ZB1STC is working for a well-known firm in Malta.

From W5KUC's interesting publication we learn that Yves Raymond, the radio-electrician at Andorre-la-Vieille, Andorra, now has his call—PX1YR. FQ8AH's QTH is Andre Wailly, Box 180, Libreville, A.E.F. HB8JJ will be active soon as HB9JJ in Liechtenstein. Cards from FR7ZA have been received from R.E.F., but W5KUC says he passes the months of January, February and March in the mountains, when he spends part of his time making out QSLs to confirm QSOs. FL8BC is Gilbert Besset, Box 335, Djibouti, Côte Française des Somalis. FB8BB, with new operator, has been on c.w. and 'phone around 14110 kc/s from the beginning of March.

Cards for ZD9AA are being handled by ZS1FD, but QSLs can still be sent *via* R.S.G.B. "Never despair!" says G6FU, who has just received a card from W2BHM for a QSO made in October, 1935. The card is spotless, though a bit faded round the edges, and records the following particulars: QSA3. R5. QRI p.d.c. QRH 14008! Is this a record? W5ASG is as much mystified as we are over the FD8AA heard asking for QSL *via* YO. This station and FD8AB give QTH as c/o R. G. de Tugny, Box 185, Lome, Togo.



Rotary beam—U.S. Navy style. The aerial system at JA2KW looks very much as though someone has lost part of a battleship!

* *29 Kechill Gardens, Hayes, Bromley, Kent.*

The club station of the R.A.F. Amateur Radio Club at Compton Bassett is now on the air. Contacts to date include KT1, 3V8, KG4, KG6, FA, SU, ZS and W. They report that KT1DD, with an input of one watt, is at the U.S. Embassy in Tangier, and managed to maintain a 569 signal throughout a 40 minute QSO. G5JL still stays on 7 Mc/s—he must have an extremely natty form of anti-B.C. filter in his receiver! He says there are plenty of ZS's on this band, and both VQ4CM and VQ4HJP come in well around 7 p.m. Other DX on 7 Mc/s was OX3GL, OX3GI, VP5XR (input 1 kW), ZC4XP and VU5AB, also worked by G5GK. He recommends a contact with FA8DA for a certain QSL from Algeria.

VP7NM, in slightly less than 18 months on the air, with an input of 100 watts, has made the grade on DX C.C., W.A.A., W.B.E., B.E.R.T.A., W.A.S., W.A.C., W.A.C.E. and D.U.F. which shows what can be done with the right kind of call sign! (And with the time to spare!—Ed.)

B.R.S. 17241 reports reception of ZD4AB (Gold Coast) 2/339 between 2230 and 2325 on February 10, on a frequency of almost exactly 3500 kc/s. B.R.S. 7594 (Yeovil) obtained quite a bag on the same band: the KP4 round-table consisting of KP4BF, DD, ES, FAA and GP at 0015 G.M.T., and W's too numerous to list. On 14 Mc/s, CR4AD at 0730, CR5AC, and AD come in around 1900 G.M.T. QSL to Box 206, Bissau, Portuguese Guinea. VP5BP in the Cayman Islands on 14180 at 1945 G.M.T. is a nice one, but try and get a card out of him! B.R.S. 7594 reminds us that the DL8's are in the Russian Zone of Germany.

SM5ARL, the Swedish QSL manager, mentions that LB6ZD is active on Jan Mayen Island; his times of operating are 2100-2200 on 14025 kc/s and from 1500 onwards each Sunday on 7012 kc/s.

GM2DBX (who now has his DX C.C. 'phone certificate), whilst agreeing that conditions have been pretty poor, lists: YI3BZL, MP4KAC (a terrific signal), 9S4AX, OX3BI, VK6WR, VP1CN and VS2CQ. G6YQ reports that VU5AB is still only active on 7020 kc/s, but is very prompt with his QSL's.

PX and 3A2

DL4IA passes some information *via* B.R.S. 7594 regarding his expeditions to Monaco and Andorra. 3A2AP and PX1AA were operated on 3.5, 7 and 14 Mc/s, both c.w. and 'phone. The transmitter consisted of a 6V6-6L6 to push-pull 6L6s driving push-pull 807s, with an input of 100 watts, and an aerial 137 feet long. The 'phone rig, which was installed in a jeep, used an 829, giving an output of 60 watts to a 10 ft whip aerial.

PX1AA was active for seven days and 3A2AP for three days. All contacts will be QSL'd on receipt of cards through either the R.S.G.B. or DL4 QSL Bureau.

Frank Cropper G6XS

Elsewhere in this issue we record the sudden death of one of the stalwart supporters of this column. Frank will write no more, but he set an example of how a DX man should support his own magazine. The following is his last contribution posted the day before he died. W3JAK/AR 14022 at Beirut; VS7XG (569) 14022 at 1650; ZS4AK (578) 14040 at 1640; EL7A (579) 14025 at 1655; FI8YB (579) 14042 at 0925; KR6HB (579) 14067 at 0925; LZ1KAB (588) 14090 at 1620; AP4A (579) 14050 at 1047; and 4UAJ, Jammu Kashmir (569) 14078 at 1130 G.M.T. Can we not hope that one or two of the other regular DX'ers will step into his place—please?

VQ1RF

Frank Featherstone, VQ4RF, in a long letter agrees that a worse period for their expedition to Zanzibar could not have been chosen. Conditions—especially for Europe—were dreadful; the only stations to come in well were the South Africans and the Ws. About 1,200 contacts were effected in some 80 countries, despite the noise level which registered a constant S7 on the S-meter, so that only really strong signals had any chance at all! One of the bright spots, however, was the splendid co-operation received from Government officials and also Messrs. Cable and Wireless, who did everything in their power to make the trip a success. All QSL cards received will be acknowledged, but SWLs must be members of a recognised society and must include a reply coupon with their card.

Frank wishes it to be known that he had only one QSO on 3.5 Mc/s—with VQ4AQ. No European or W contacts were made on 7 Mc/s. He now has a permanent VQ1 licence and hopes to make a further trip when conditions have improved, and when the local electricity supply has been changed over to a.c. He suggests a standard time basis for Amateur Radio contacts. He receives cards quoting M.E.Z., E.S.T., P.S.T., G.M.T., etc., and thinks it is high time the whole world used the same standard. (We agree.—Ed.)

Being Reprinted

R.S.G.B. AMATEUR RADIO CALL BOOK

Changes of address and additions for inclusion in the Second Edition of the R.S.G.B. Call Book must reach the Call Book Editor **(Mr. J. P. P. Tyndall (G2QI), 174 The Drive, Ilford, Essex)** by not later than Saturday, March 22, 1952.

United Nations

G3BVX, now in Pakistan, explains the 4U calls now being heard on our bands. The U.N. has its own communications network to cut down the cost of inter-mission traffic, the main station being 4UN in Jerusalem. All traffic from the missions is routed to 4UN, thence to Tangier where it is transmitted commercially to New York. The station farthest east—Pusan in Korea—is 4UK; the station in Bangkok, Siam (where the Headquarters of the U.N. Economic Commission for Asia and the Far East are situated), is 4UT; 4UA is at Rawalpindi, in Pakistan; and other stations are 4UG in Greece, and 4US in Geneva. Many of the missions have sub-stations which add a letter to the call sign of their control station; thus the sub-station of 4UA is 4UAK.

These stations, which are already recognised by some 60 nations, may be operated in the amateur bands without the permission of any Government. Cards have been received and dealt with at the R.S.G.B. Bureau.

Who's Who

G3SS—who has left for Nairobi, where he will be active as VQ4SS—is calling in to see a few ZS amateurs on his way. Norman Joly, G3FNJ, is now safely out of Egypt, and will eventually be active as ZC4RX. G3HBK is in Bahrein, and hopes soon to be on the air. MD5PM is now

back home but is not G3HFZ—this is the call of Flt.-Lt. Yardley, now in M.E.A.F. 15. Will ZE2KF, now in this country, please write to ZS6RI ?

VQ3BNU/G3BNU, who is returning to England next month, will probably go to VQ4 around October. His home address is 216 Gloucester Rd., Cheltenham. G5CP—who left for the U.S.A. on February 19—will be away for six weeks—lucky man ! 111R will soon be operating as AP1IR, if the necessary permission is forthcoming. According to G5JL, he will be there for about a year. SU1VA will soon be back home at " Manor House," Isleham, Ely, Cambs. G3IDR, now in Germany, speaks enthusiastically of the warm welcome extended to him by DL1KU, PM and DL6IC.

G3IRC, who is in Ceylon, where he hopes soon to have a VS7 call, says he owes much to the kindness shown to him by VS7DB, who is returning to the U.K. shortly. Ex-AP2Z hopes soon to be back in England ; he has QSL'd all his contacts. Congrats to Rowley Shears (G8KW, ex-DL2KW) and his wife on the safe arrival of a junior op.

Generosity

Readers will remember that a month or two ago we referred to Harold Lawson, B.R.S. 19312 (Hull), who is an invalid. G3GWT now tells us that, in consequence of our remarks, Harold has had many long and interesting letters from amateurs all over the country. In particular he thanks members of the " Tops " Clubs who, due to the inspiration of G5JL and GW8WJ, organised a collection and presented him with an 1155 receiver in good working order.

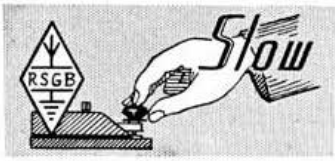
What a splendid story and what a fine example of the true " Ham " spirit.

Correspondence

Ed Sanders, WN4TNG, of 136 N. Stonewall Street, Rock Hill, South Carolina, 12 years of age, would like to correspond with a young radio amateur in Britain. Any offers? If so, please write to him direct.

Montreal Amateur Radio Society

The following officers were elected at the recent A.G.M. of the Club: *President*, John Harper, VE2ADX; *Vice-President*, Hal Harries, VE2ZF; *Treasurer*, Gerry McMullen, VE2IL; *Secretary*, Ethel Pick, VE2HI; *Liaison Officer*, Sid Chapman, VE2LV.



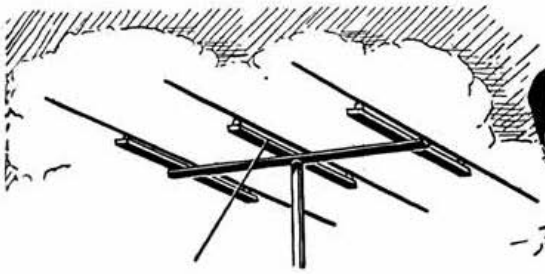
Morse Practice Transmissions

The following slow Morse transmissions, sponsored by the Society, are intended to assist those who aspire to obtain an amateur transmitting licence. More volunteers are still required for parts of the British Isles not already covered, particularly in the London Area. Stations listed who find themselves unable to continue transmissions should immediately notify the organiser, Mr. C. H. L. Edwards, A.M.I.E.E. (G8TL), 10 Chepstow Crescent, Newbury Park, Ilford, Essex.

* *Each station will operate in turn.*

G.M.T.	*Call*	*kc/s.*	*Town*
Sundays			
10.00	G6MH	1990	Southend-on-Sea
10.30 *	G3AAZ, G3EPK, G5UM	1780	Welwyn
10.30	G3GIO	1915	Guildford
10.30 *	G3ESP, G3US, G3HCX, G3IDT	1990	Pontefract
11.00	G2FXA	1900	Stockton-on-Tees
21.00	G2FIX	1812	Nr. Salisbury
22.15	G3AEZ	1847	Dorking
Mondays			
19.00	G3NC	1825	Swindon
21.00	G3BHS	1720	Eastleigh, Hants
21.00	G3BLN	1900	Bournemouth
22.00 *	G3EJF, G3DZU, G2AYG	1810	Bury, Lancs
22.00	G3AEZ	1847	Dorking
22.00	G3GIO	1915	Guildford
20.30 *	G6LX, G3BLP	1875	Croydon
22.15	G2BRH	1900	Ilford
22.30	G8TL	1896	Ilford
Tuesdays			
18.00	G2FXA	1900	Stockton-on-Tees
19.00	G3IBL	1883	Derby
19.30 *	G3HGY, G5PP, G5SK	1830	Coventry
21.00	G3EFA	1855	Southport
22.00	G3ELG	1772	Rotherham
22.00	G2BND	1890	Dalston, E.
22.00	G2FXA	1900	Stockton-on-Tees
22.00	G3GIO	1915	Guildford
23.00	G2XG	1735	Chingford
Wednesdays			
14.00	G3ADZ	1910	Southsea
19.00	G3ADZ	1900	Southsea
19.30 *	G3HBX, G6XA	1870	Warwick
21.30	G3HKC	1770	Birmingham
22.00	G3DLC	1800	Grays, Essex
22.00	G3GIO	1915	Guildford
Thursdays			
18.00	G2FXA	1900	Stockton-on-Tees
19.00	G3NC	1825	Swindon
19.30	G3GRM	1815	Derby
19.30 *	G2DOF, G3DTG, G3ENH, G6KI, G8JI	1830	S. Birmingham
20.00	G3FVH	1920	Hull, Yorks
21.30	G6DL	1760	Birmingham
22.00	G2NK	1730	St. Mary Cray
22.00	G3AEZ	1847	Dorking
22.00	G2FXA	1900	Stockton-on-Tees
22.00	G3GIO	1915	Guildford
22.30	G3OB	1803	Manchester
Fridays			
19.00	G3BLN	1900	Bournemouth
20.00	G3CSG	1870	Wirral
20.00	G5AM	1900	Witnesham, Ipswich
21.00	G3BHS	1720	Eastleigh, Hants
22.00 *	G3AUT, G3AUF, G3CBV, G3GTX	1785	Rugby
22.00	G3GIO	1915	Guildford
Saturdays			
11.00	G2FXA	1900	Stockton-on-Tees
14.00	G3ADZ	1910	Southsea
22.00	G3GIO	1915	Guildford
23.00	G2FXA	1900	Stockton-on-Tees

MEMBERS USING THIS SERVICE ARE REQUESTED TO SEND LISTENER REPORTS TO THE STATIONS CONCERNED



AROUND THE V.H.F.'s

By W. H. ALLEN, M.B.E. (G2UJ)*

70 cm Activity Plan

IT is early yet to assess what interest has been aroused by the plan, announced last month, designed to achieve increased and co-ordinated activity on the 70 cm band, but even at this stage it is evident that the interest is there. Further information on this subject will appear in this space in coming months.

G5VY (Enfield, Middx.) and G2FRG (Worthing, Sussex) both suggest that encouragement should be given to the use of simple gear on this band in order to attract more activity. This is an excellent idea and there is no doubt that many of the local nets now in operation on 160 and 80 m could, with advantage, be transferred to the v.h.f.s where T.V.I. can be more easily prevented and interference from other stations hardly exists. As one dyed-in-the-wool "Top-Band" enthusiast recently remarked when listening on 2 m for the first time, "Wot, no fish ?"

That a satisfactory 70 cm transmitter of the m.o.-p.a. type can be produced has been proved by G5VY, who will be remembered by those active on 60 and 112 Mc/s many years ago as the conductor of the old V.H.F. Group. He employs a CV63 valve as m.o. in a high-Q tank circuit which he has developed, loosely coupled to an 832 p.a. which may be driven at full input with excellent stability.

Frequency Measurement

While appreciative of the difficulties and expense attendant upon building a c.c. transmitter for 70 cm operation and the attraction of producing probably more r.f. output from a simpler transmitter, a note of warning must be struck by drawing attention to the fact that the measurement of frequency on this band to the accuracy required by the amateur licence is not a very easy task, but one which must be undertaken when a master-oscillator is employed. There are quite a number of stations on 70 cm at the present time operating modern equipment capable of good performance on either c.w. or 'phone, and it would be quite unfair if the section of the band normally in use by such stations—432 to 438 Mc/s—were to be occupied, perhaps unknowingly, by stations putting out unstable transmissions. The band is of ample width—40 Mc/s—for all who are likely to use it, but it is essential, if present development work is not to be prejudiced, for stations with other forms of control than crystal or really good master-oscillators, to operate outside the above-mentioned section of the band. There is more than enough room for all, provided we all know where we are!

The question of simple apparatus leads naturally to the superregen. receiver as an alternative to the superhet. converter. This circuit, amongst its many disadvantages, has the ability to receive unstable modulated transmissions which would be completely unreadable on a conventional superhet. In the early days on 5 m it was sometimes found that the "mush" from the superregen. detector had a better range than the supremely inefficient transmitters often in use at that time. The superregen. still produces that "mush," and where a number of stations are in operation in fairly close proximity to one another it can be a very real problem. On 5 m and even on 2 m it should be possible largely to overcome this disadvantage by the use of a r.f. stage, but on 70 cm this could hardly be offered as a solution on economic grounds: no one using a superregen. receiver, because he is unwilling or unable to build a superhet. converter, could be expected to add a r.f. stage to his otherwise simple receiver.

Coming to the ever-present topic of T.V.I., it is fairly certain that although little apprehension need be felt in operating a m.o.-p.a. type of transmitter during television hours, the type of radiation from a superregen. receiver might be quite another matter. No information is available on this point but it is a possibility which should not be overlooked.

Simple 2 Metre Receiver

Provided that extreme performance is not required from the receiver it would appear that one solution to the problem of the reception of modulated transmissions from transmitters not employing c.c. would be a revival of the principle used in the old *QST* "Infradyne" circuit introduced before the war for use on 5 m. This was a superhet. with a superregenerative second detector, and thus had a foot in both camps. If memory serves correctly the i.f. (at which, of course, the detector operated) was in the region of 10 Mc/s and owing to the inherent poor selectivity in all circuits quite good performance was obtained from modulated transmissions even when they were severely, although unintentionally, frequency-modulated.

As a suggestion, such a receiver could be built for 70 cm using a crystal diode as mixer, a simple lines or "plate" oscillator such has been described in this journal, and a stage of i.f. amplification at, say, 30 or even 60 Mc/s. The second detector would be of the conventional superregen. type and the overall results should be a considerable improvement over normal superregen. performance while being far simpler to construct than a high-stability superhet. converter. The receiver should be comparatively free from radiation as the exact value of the i.f. would be relatively unimportant over a very wide range of frequencies. Reception of c.w. on such a set would be virtually impossible and the sensitivity poor compared with a conventional superhet. but possibly something on the lines described might be a satisfactory solution to the problems of some amateurs, who would thereby obtain an introduction to the v.h.f.'s which might lead them later to consider an extension of their activities with more modern apparatus.

* *32 Earls Road, Tunbridge Wells, Kent.*

Many amateurs are likely to disagree with the above observations and suggestions on several points. It has never been our practice to advocate the use of out-of-date methods and nothing should be read into the foregoing to suggest that apparatus other than c.c. and superhets. is to be recommended for the two metre band.

Crystal control on 2 metres does not entail a great number of stages, and several valves capable of working at good efficiency with up to 100 W or more input are available for the final stage in the transmitter. Receivers having as good or better a noise factor than is customary on the lower frequencies may be built, again with valves and components of not too specialised a type nor unduly expensive. On 70 cm, however, the picture is rather different. To design and construct both transmitter and receiver demands considerable skill, both electrical and mechanical, if results are to be in any way comparable with those obtaining on 2 m. Much good work has been and will doubtless continue to be done with 832 triplers in the final stage of the transmitter but such an arrangement only makes available for transmission a small fraction of the 25 W input which is permitted. An excellent design for a receiver employing standard types of valves recently appeared in the BULLETIN but its construction could hardly be recommended to a comparative newcomer. Unless some encouragement is given to the use of simpler gear the occupation of the band may be so limited that envious eyes may be cast upon it by other services. What should be done ? Readers' opinions will be welcome.

Two Metre News

The band, seen from G3EHY (Banwell, Som.) provided some 150-mile openings from January 2 to 23, but during the following fortnight conditions were poorer and contacts were mostly confined to the usual skeds. which were consistent up to 100 miles or so but with low signal strengths on many occasions. Conditions started to show an improvement during the second week-end in February but later were even better, and with an anti-cyclone more or less stationary west of Ireland for several days some very good periods were experienced, together with a notable increase in activity. The northern stations were particularly well received at that time. On the 16th G5YV was heard at S8 early in the evening, and between 1900 and 2000 G.M.T. it was possible to work GW2ADZ on 70 cm with strengths up to S6-7 both ways.

G2UJ noted good conditions during the late evening of February 18. G5YV was worked by G3BLP and called by G8DV/A and in all some seven or eight stations were noted despite the fact that the only aerial available was a long wire without proper matching to the receiver.

Lack of activity on 2 m is a comment frequently heard these days, but it could hardly be upheld in the face of a report received from B.R.S. 19421 (Boreham Wood, Herts.) who has heard no less than 73 stations since commencing listening on the band in November last. Most of these stations were in or around London, but G3EHY has provided a fairly consistent DX signal. The receiver in use employs a 6AG5 r.f. amplifier, EF54 mixer and EC52 oscillator fed from a 4-element Yagi aerial 25 ft above ground with 300-ohm open feeder. B.R.S. 19421 makes a practice of listening with his beam orientated in a different direction each evening, and records the strength and fading of the more consistent stations together with the prevailing weather conditions. He remarks "While I may discover nothing new, my results are at least interesting, and it's only a hobby." We feel that he's got something there!

GW3ENY (Llandudno) writes of the fine hospitality he enjoyed when he was a guest of EI2W at the I.R.T.S. Annual Dinner in Dublin in January last. Other visiting amateurs included GI5HV and GI3GQB. The latter is active on 2 m most evenings. EI2W is rebuilding his gear and aerial, and promises to be on again on April 1 with a 32-element beam—two stacks of 16 elements side by side. He asks for co-operation in testing the new aerial.

GC2CNC (Jersey, C.I.) is active on 145.13 Mc/s c.w. and runs a sked. with G8IL (Salisbury) every Sunday evening at 2230 G.M.T. G2UN (Lancing, Sussex) is also on the band.

70 cm

G5GX (Leven., E. Yorks) is active on 435.4 Mc/s every evening beaming south. G3AQC and G3IEE (Kingston-on-Thames) work on 436 Mc/s on Tuesdays and Thursdays from 2100 to 2200 G.M.T. using corner reflector and Yagi aerials respectively.

* * *

Reports intended for the April issue of the BULLETIN should be submitted by not later than Friday, March 21.

APRIL ISSUE

Due to the fact that Easter this year will fall during the time when the BULLETIN is normally at press, the April issue will appear a few days late. Publication is expected to take place on the 16th or 17th of next month.

Mullard Educational Service

AN educational service has been instituted by Mullard, Ltd., to provide teachers and instructors in electronic subjects with information concerning recent developments and applications in this field. Full details of this service are described in a pamphlet recently issued by the Mullard Technical Publications Dept., Century House, Shaftesbury Avenue, London, W.C.2, entitled *The Mullard Educational Service*. Included in the services listed in this pamphlet are: Technical Publications ; Assistance to Individual Instructors ; Filmstrips ; Wall Charts ; and Class Instruction and Work Sheets.

The technical publications, which are issued free of charge, include descriptions of new valves, electron tubes and other products, bulletins describing new developments in circuitry, and application notes on new products.

The 35 mm filmstrips, which deal with radio valves, cathode-ray tubes, television, high-frequency heating and similar subjects, contain, on an average, about 35 frames, and each strip is accompanied by a printed booklet containing very full teaching notes.

Radio Show Dates

THE Radio Industry Council announces that the 19th National Radio Show will be held at Earls Court, London, from Tuesday, August 26, to Saturday, September 6. There will be restricted admission on August 26.

The Radio Component Show will be held at Grosvenor House, London, from April 7 to 9, and will be opened at 11 a.m. on April 7.

AMATEUR TV

*By M. BARLOW (G3CVO)**

THIS is the first of a series of bi-monthly articles on activity in the Amateur TV world, mainly concerning the British Amateur Television Club. This Club now has some 130 members, and is in its third year of activity. It should be noted that neither the Club nor these notes is concerned with the B.B.C. Television Service in any way, but only with *amateur* television transmissions.

With this background, let us take a look at what can be done. As readers will be aware, transmission *on the air* is restricted to the 70 cm band, and higher amateur frequencies, and is subject to a special fee of £3 per annum in addition to the normal sound transmitting licence. Either of these taken singly constitutes a considerable discouragement to go on the air with television, and indeed, as far as is known, there are only three stations in the country so licensed. Overseas, the story is different; no less than five Dutch TV transmitters are active in the 2 m band, and in the U.S.A., of course, there are several active on 70 cm. Other stations are under construction in Sweden, Norway, Finland, Denmark, France, Canada, South Africa, Australia, New Zealand and Eire. This is not a great number, admittedly, but the fact is that TV transmission appeals to many who are not licensed amateurs at all, and therefore restrict their experiments to closed-circuit working—a mode of operation which saves the cost of a licence and the work involved in putting a TV signal on a v.h.f. band. As an indication, some 45 members of the B.A.T.C. are licensed, and 42 of them are using closed-circuit equipment.

It is commonly thought that the construction of a television transmitter is a costly business. So it can be, but so, also, is the construction of a large sound transmitter, while the average communications receiver is not particularly cheap. But just as in the sound case, simple equipment can give eminently satisfactory results. Using five ordinary receiving-type valves, a cheap surplus photo-cell, and two surplus cathode-ray tubes, it is possible to transmit pictures with up to 3 Mc/s definition, using flying-spot techniques. The cost? About £10 from scratch. With modifications, live head and shoulder reproductions can be produced instead of simple still or cine transparencies. Naturally, to go on the air, more complex equipment is required, but this can be added to the simpler gear at a later date. As far as proper camera tubes are concerned, the RCA 5527 Iconoscope is the only suitable tube on the market, and until recently this has been available at about £28. Unfortunately, the latest currency restrictions have prevented the import of these tubes for experimental work, and we are thrown back on modifications of the flying-spot system. This is quite satisfactory, however, in spite of its limitations, and is better suited to the man with little time and money to spare. Colour and stereoscopic TV are easy to try, too, and it is hoped that a series of constructional articles will appear in future issues of the BULLETIN.

Personalities

Amongst the luckier ones with 5527s are G2DUS, G3AKJ, G3BLV, G3BHH and G5ZT, who often run a 40 m sked on Sundays on a "TV-only" basis. Using 16 mm. telecine equipment are G3ETI, G3BLV and George Short, who has a 5527 camera of professional appearance. Stills and 35 mm. filmstrips are used by most of the above together with G2WJ, G3AAW, G3AST and G3CVO. Also in this group are about 50 unlicensed members of the B.A.T.C. G3AST has a radio-facsimile unit on the same lines, and Grant Dixon has a three-colour transparency transmitter. Working out the problems on the r.f. side, especially with a view to finding a simple 70 cm converter that can be placed in front of a domestic television receiver, are many well known v.h.f. workers, including G2WJ, G2DD, G2DLJ/A and G3GBO. Many others have contributed good ideas and advice, but there is plenty of room for more.

It is hoped that the foregoing will give some idea of what is happening, and will appeal to the experimentally minded—especially those who complain about the "communications-only" aspect of the amateur licence examination. There is work here for both transmitting amateur and listener, whatever their interests, and after seeing your own pictures, we'll guarantee that sooner or later you will sell the main rig from lack of use!

* *Cheyne Cottage, Dukeswood Drive, Gerrard's Cross, Bucks.*

The Worked Cuba Award

THE Association of Radio Amateurs of Las Villas offer a certificate to foreign radio amateurs who can produce evidence to show they have worked at least seven of the eight Radio Districts in Cuba. Cards should be sent to P.O. Box 136, Santa Clara, Cuba.

Stations using the prefix CO are licensed to work telegraphy and telephony on all bands. Those using the prefix CM are licensed to work telegraphy on all bands and telephony in the 7 Mc/s. band.

NEW MAP OF EUROPE. Edward Stanford Ltd., Long Acre, London, W.C.2., have recently produced a new general map of Europe to the scale of 95 miles to 1 inch., which should appeal to radio amateurs in general and short wave listeners in particular. The modern, as well as the obsolete spelling of many town names is a special feature of the map which is offered at 5/-.

MICROPHONE ACOUSTICS FOR THE RADIO AMATEUR

Do you understand the functioning of your microphone as well as you do that of your receiver or of your aerial system? Why are some microphones "toppy" and some "boomy"? What makes a microphone unidirectional? Why are high quality microphones generally so insensitive? These problems will be discussed in terms familiar to the radio amateur, and illustrated by some demonstrations, at the last London Lecture Meeting of the Season.

The Speaker: **Mr. H. A. M. Clark (G6OT).**
The Date: **Friday, March 28, 1952, at 6.30 p.m.**
The Place: **The Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2.**

Buffet tea from 5.30 p.m.

SOCIETY NEWS

Messages of Sympathy

THE President and Council have offered their sincere and heartfelt thanks to the overseas Amateur Radio organisations and individual amateurs who sent messages of condolence on the occasion of the death of His Majesty King George VI.

Long Service Honoured

AT the February meeting of the Council, Mr. Victor Michael Desmond (G5VM), was elected an Honorary Member and Mr. Alec John Henry Watson (G2YD), a Vice-President of the Society.

Mr. Desmond has been a Member of the Society since 1928. From 1931 to 1946 he was District 3 (Midlands) Representative. He served on the Council in 1932, was elected Acting President in 1947 and President in 1948, an office he held for two years.

During his long association with the Society, Mr. Desmond has visited practically every main centre of activity in the United Kingdom. Prior to the war he operated one of the twelve U.K. Empire Link Stations, carrying out many valuable duties in that connection.

Mr. Desmond is a Past President of the Midland Amateur Radio Society and a Vice-President of the Coventry Amateur Radio Society. During his term of office as District 3 Representative, amateur activity in the Midlands reached a high level.

Mr. Watson joined the Society in 1938, became a Member of the Council in 1941, and two years later was elected Honorary Treasurer. During the nine years he held that office the financial resources of the Society increased very considerably. Mr. Watson's wide knowledge and experience of financial matters contributed materially to the sound position which he was able to report at the last Annual General Meeting.

R.S.G.B. Amateur Radio Call Book

MEMBERS will be glad to learn that the Second Edition of the R.S.G.B. Amateur Radio Call Book is due to be published next month, price 3/6d., or 3/9d. post paid. A further announcement will appeal in the April issue of the BULLETIN.

It will help in the distribution if Town and other representatives will ascertain the requirements of local members and apply to Headquarters for bulk quantities.

Any licensed amateur resident in the United Kingdom or Eire whose call sign, name and address does not appear in the First Edition or who has changed his address and has not previously notified Headquarters or the Call Book Editor, should send a postcard immediately to Mr. J. P. P. Tyndall, G2QI, 174 The Drive, Ilford, Essex.

Incidentally Mr. Tyndall wishes to place on record his thanks to all those members and other amateurs who have taken the trouble to write to him in praise of the First Edition. The messages have been so numerous that it has been impracticable to acknowledge receipt of every one and it is hoped that all concerned will accept this as a grateful acknowledgment. Mr. Tyndall also wishes to thank those who have sent additions and amendments to be incorporated in the next edition.

Circular Letters

APROPOS the notice published on Page 317 of the January, 1952, issue of the BULLETIN, the Council has decided that not more than four times in any calendar year a Town or Area Representative may, at the Society's expense, issue a circular to local members on matters of local interest.

In such cases the Town or Area Representative will be permitted to make an "en bloc" entry on his Expenses Sheet for circulars sent at the cheap rate.

When reimbursement is claimed a copy of each such circular must be appended to the Expenses Sheet. Town and Area Representatives are reminded that the circular must relate wholly to R.S.G.B. affairs.

Society Films

FILMS taken at the I.A.R.U. Congress held in Paris during May, 1950, and at the National Convention held in London last June are now available for display at Society meetings.

Applications should be addressed to the Assistant Secretary (Miss May Gadsden) and should contain at least two alternative dates.

In order to ensure that the films are maintained in good order the Council has accepted an offer from Mr. J. R. Wenn, 2 Parkway, Seven Kings, Essex, to act as Curator.

Those responsible for borrowing the films must give an assurance that they will be returned by *registered post* to the Curator *in the containers provided* immediately after showing. The films are 16 mm silent.

London Lecture Meeting

ABOUT 60 members were present at the Institution of Electrical Engineers on Friday, February 29, 1952, to hear Messrs. L. Bounds and C. W. Touch (G2HDJ) of Mullard, Ltd., lecture on "Modern Valves for V.H.F. Work." Factors influencing the design of valves for use at very high frequencies were considered in detail, after which some practical transmitter circuits for 2m and 70 cm operation were outlined. The lecture was illustrated by slides, whilst a wide range of modern v.h.f. valves, and a compact 70cm transmitter constructed by Mr. Touch, were displayed.

Messrs. Haydon and Clark took part in the discussion which followed, after which a vote of thanks to the lecturers was proposed by Mr. T. L. Herdman, B.A., G6HD (Member of Council). The Chair was taken by the Immediate Past-President, Mr. W. A. Scarr, M.A., G2WS, who, at the outset of the meeting, announced that Mr. V. M. Desmond, G5VM, had been elected an Honorary Member, and Mr. A. J. H. Watson, F.S.A.A., a Vice-President of the Society.

Amateur (Maritime) Wireless Licences

FOR some considerable time negotiations have been in progress between the Society and the G.P.O. in connection with the issue of Maritime Mobile licences.

The G.P.O. have now advised the Society that they are prepared to authorise qualified persons to operate an amateur wireless station on board ship on the understanding that it will be used for the sole purpose of conducting experiments with nominated amateur stations. The facility will, initially, be confined to the 144, 420, 1215, 2300 and 5600 Mc/s amateur bands. The annual fee for such a licence will be of the order of £4.

Persons who wish to take advantage of these very limited facilities should communicate direct with the Overseas Telecommunications Dept. (B.B.) Headquarters Building, G.P.O., E.C.1.

The Society much regrets that its efforts in this connection have not been more successful.

Representation

THE following are additions or amendments to the list published in the February, 1952 issue.

Region 1

LANCASHIRE EAST
Town Representative :
Manchester, North-West.—B. Wilbraham (G2ATU), 1 Rochester Avenue, Sedgeley Park, Prestwich.

Region 2

YORKSHIRE WEST
Town Representatives :
Barnsley.—C. T. Malkin (G5IV), 5 White Hill Terrace.
Cleckheaton.—J. Clegg (G3FQH), 15 Victoria Avenue.

YORKSHIRE EAST
Town Representative :
Kingston-upon-Hull.—J. R. Borrill (G3FKK), 321 Priory Road.

Region 3

SHROPSHIRE
Town Representative :
Wrekin Area.—J. C. Tranter (G3BQQ), 78 New Street, Wellington.

Region 4

LINCOLNSHIRE
Town Representatives :
Scunthorpe.—G. Layzell (G3AMM), 26 Newland Drive.
Spalding.—F. S. G. Rose (G2DRT), 10 South Parade.

NORTHAMPTONSHIRE
County Representative : L. Critchley (G3EEL), 36 Waterloo Road, Peterborough.

NOTTINGHAMSHIRE
Town Representative :
Newark.—W. A. G. Davidson (G3EVG), 4 Ormston Avenue, Hawton Road.

Region 5

BEDFORDSHIRE
Town Representative :
Shefford Area.—Ivan Howard (G2DUS), 40 Regent Street, Stotfold.

Region 7

LONDON, SOUTH-EAST
Town Representative :
Woolwich.—K. W. Ireland (G3IKW), 82 Grangefield Road, S.E.9.

Region 9

CORNWALL
Town Representative :
Falmouth.—N. Elliot (B.R.S. 15699), 14 Tregenver Road.

DEVONSHIRE
Town Representative :
Plymouth.—J. Eddy (G3TX), 55 Greenbank Avenue, Lipson.

DORSET
Town Representatives :
Dorchester.—K. G. O'Brien (B.R.S. 18516), 18 St. Helens Road.
Poole.—A. E. Harvey (B.R.S. 16281), Hillview, Curlieu Road, Oakdale.

CHANNEL ISLANDS
Town Representative :
Jersey.—E. S. Chapman (GC2FMV), Les Quatres Vents, Clos des Cellettes, St. Peter's Valley.

Region 15

COUNTY ANTRIM
County Representative : Grahame Williamson (B.R.S. 7781), Avonmore, Antrim Road, Ballymena.

COUNTY DOWN
County Representative : J. E. Maxwell (GI3ML), 31 Farnham Road, Bangor.

Correction

The call sign of the Cheltenham T.R. (Mr. J. J. Yeend) is G3CGD, not G3GGD.

The address of the Edgware T.R. (Mr. P. A. Thorogood, G4KD) is 35 Gibbs Green, Edgware, and not as stated in the February issue.

Vacancy

Mr. C. B. Raithby (G8GI) has resigned as Representative for the County of Lincolnshire.

Nominations for his successor should be made in the prescribed form and sent to reach the General Secretary by April 15, 1952.

Ballots

Messrs. D. Samson, GM3EQY, and K. M. Senior, GM3AEI, having been nominated for the vacancy it will be necessary to conduct a Ballot in Region 13 for the position of East, Mid and West Lothian, County Representative.

Voting

Corporate Members resident in the three counties concerned are invited to record their vote in favour of one of the above candidates and to forward same on a *post card* addressed to the General Secretary, New Ruskin House, Little Russell Street, London, W.C.1, to arrive not later than April 15, 1952.

Prescribed Form of Voting Card

Election of County Representative 1952.

I ..... *being a fully paid-up Corporate Member of the Society, wish to record my vote in favour of Mr.* ..... *as County Representative for* .....

Signed .....

Call sign or B.R.S. .....

Address .....

The First All-Cornwall Hamfest

MORE than seventy members and their wives gathered at the Cove Cafe, St. Agnes, on February 17 for the first Hamfest in the history of Cornish Amateur Radio. Headquarters was represented by Council Member Herbert Bartlett, G5QA (Region 9 Representative). Other guests included the C.R., David Beattie, G2WW; the T.R. for Falmouth, A. L. Rodgers, G2FQD; and the A.R. for West Cornwall, R. V. Allbright, G2JL. The walls of the cafe were adorned by cartoons of well-known Cornish amateurs.

A special feature of the occasion was a display of amateur equipment, including a portable 160-40 m transmitter; a 160 m transmitter constructed from a TU5B unit; a low-power c.c. battery transmitter (input 1½ W); a N.F.D. transmitter; a 2 m converter; and two communications receivers (Eddystone 640 and a BC 348).

Mr. H. Bartlett (G5QA), Council Member and Region 9 Representative, speaking at the recent Cornwall Hamfest.

During tea, the North Cornwall A.R.—J. E. Bowden, G2AYQ, organiser of the Hamfest—read a message of good wishes for the success of the function from the General Secretary, who regretted that he could not be present. Mr. Bartlett, in a brief speech, expressed his pleasure that the Hamfest had been so well supported—a feeling echoed by the Cornwall C.R. G2AYQ, in his reply, commented that although an attendance of 40 had been expected, more than 70 persons were present. He also expressed thanks to all who had donated prizes for the free draw.

After the draw, in which Mrs. Bartlett assisted, the assembly proceeded to the beach for photographs. Four short films were then screened—"Radar Goes to Sea" (Metro-Vickers Electrical, Ltd.); "In all Weathers" (C.O.I.); "A Gallant Enterprise," featuring Captain Kurt Carlsen and the *Flying Enterprise* (C. Metcalfe, G3DQ); and—in contrast—a "Popeye" cartoon!

Affiliated Societies' Contest

TWENTY-FIVE entries were received for the third Affiliated Societies' Contest—a small reduction compared with last year. Several other clubs took part but did not submit logs or send check logs.

The Thames Valley Amateur Radio Transmitting Society, operating G6MB, maintained the lead they narrowly won last year, and will be recommended to the Council for the award of the Edgware Trophy. Coventry Amateur Radio Society has climbed to second place, followed by West Kent Radio Society and Surrey Radio Contact Club. These last two were respectively fourth and third last year.

In spite of the reduction of the duration of the contest from sixteen hours last year to ten hours, the winning station made an increased number of contacts, 111 as against 101.

For some years now, in the published account of National Field Day, comment has been necessary on the standard of accuracy of operating. The criticism is again justified in this event. It would seem that in contests where a group of operators are working together, the standard falls as compared with single operator contests. The fact that the Contests Committee had on hand at the same time the judging of both this event and the January "Top Band" contest, served to emphasise this point most markedly. Very few comments accompanied the logs, and no criticisms or suggestions regarding the rules were made.

The Cheltenham Amateur Radio Society made the highest score in the c.w. section, but had trouble in the telephony section.

Posn.	Name of Society	Telegraphy		Telephony		Total Points
		Call Sign	Points	Call Sign	Points	
1	Thames Valley Amateur Radio Transmitters' Society	G6MB	177	G6MB	171	348
2	Coventry Amateur Radio Society	G2LU	171	G3RF	142	313
3	West Kent Radio Society	G4IB/P	156	G4IB/P	138	294
4	Surrey Radio Contact Club	G8TB	157	G8TB	129	286
*	Leicester Radio Society	G3AFZ	159	G3AFZ	123	282
	Medway Amateur Radio & Transmitters' Society	G2CBA	150	G2CBA	132	282
5	Edgware & District Radio Society	G3ASR/A	154	G3ASR/A	113	267
6	Stourbridge & District Amateur Radio Society	G3BMY	136	G3CLG	129	265
*	Warrington & District Radio Society	G8TR	122	G8TR	130	252
7	West Cornwall Radio Club	G2AYQ	145	G2AYQ	105	250
8	Rotherham Radio Club	G3ELG	126	G3ELG	122	248
9	Derby & District Amateur Radio Society	G3ERD/A	144	G3ERD/A	97	241
10	Ariel Radio Croup, B.B.C. Club	G3GDT	127	G3GDT	109	236
11	Harlow & District Radio Society	G3ERN	134	G3ERN	93	227
12	Cheltenham Amateur Radio Society	G3GPW	189	G3GPW	22	211
	Gravesend Amateur Radio Society	G3GRS	122	G3GRS	89	211
14	Sutton & Cheam Radio Society	G2BOF	122	G2BOF	83	205
15	R.A.F. Amateur Radio Society (Locking)	G8FC	131	G8FC	66	197
16	Yeovil Amateur Radio Club	G3CMH	93	G3CMH	93	186
17	Wrekin Amateur Radio Society	G3FDG	98	G3FDG	77	175
18	Sheffield Amateur Radio Club	G3FA	105	G3FA	59	164
19	Chester & District Amateur Radio Society	G2YS	142	G3EXT	15	157
20	Wirral Amateur Radio Society	G3ERB	97	G3FXC	49	146
*	Torbay Amateur Radio Society	G3AVF	137	——	—	137
21	R.E.M.E. Radio Club	G3HIE	117	——	—	117

* Ineligible for award, owing to technical breach of a rule.

CHECK LOGS *are gratefully acknowledged from: Kingston and District Amateur Radio Society, R.A.F. Colerne Amateur Radio Transmitting Club, Swanton Morley Amateur Radio Club and from G2BW, G2BSA & GW3HJR.*

European DX Contest

THE Danish National Society, Experimenterende Danske Radioamatorer, announce that the Sixth All-European DX Contest, to be arranged by them as part of their 25th Jubilee programme, will take place over the weekends, December 6/7 (c.w.), December 13/14 (phone), 1952. Detailed rules will be published later.

A Fortnight in Denmark

THIS year's trip to the Continent for radio amateurs—an annual event organised privately by Harold Andrews (G5DV)—will be to Copenhagen. The party will leave London by night boat on August 17, returning from Copenhagen on September 1. Return fare, including berths on the boat and reserved seats on all trains—but not including cost of reserved hotel accommodation—will be £17. Further details may be obtained on request from G5DV, 175 Moorland Road, Weston-super-Mare, Somerset.

Can You Help?

Sightless amateur Dennis Hann, G3UY, 41 Ashenden Road, Guildford, Surrey, who is anxious to dispose of his present rather ambitious band-switched crystal-controlled 80, 40, 20 and 10 metre 100 watt transmitter for a more compact 50-75 watt table-top rig. He would prefer to make a straightforward exchange, but if that is not possible he offers his transmitter to anyone qualified and willing to build something more suited to his present requirements.

Obituary

WITH deep regret we record the death of Mr. H. H. Burrows, O.B.E., J.P., President of the Southend and District Radio Society. Mr. Burrows was a Founder-Member of that Society, and always maintained a great interest in its activities. Many members of the Southend Society were present at the funeral service on February 16.

Our sympathies are extended to Mrs. Burrows and her family.

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R.S.G.B. PUBLICATIONS

THE TRANSMITTING LICENCE (3rd revised edition). Complete guide on how to obtain an Amateur Transmitting Licence in the United Kingdom, with additional information about the Radio Amateurs' Examination syllabus, the Morse code, international prefixes, the amateur bands, etc. **Price 9d. (by post 1/-).**

SERVICE VALVE EQUIVALENTS (3rd revised edition). Comprehensive list of the commercial equivalent type-numbers of hundreds of British and American Service valves and cathode-ray tubes—invaluable to users of war-surplus equipment. **Price 1/- (by post 1/3).**

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MICROWAVE TECHNIQUE. An excellent introduction to the specialised techniques of u.h.f. and microwave practice, covering basic theory and the design of communication equipment for frequencies above 500 Mc/s. (54 pages.) **Price 2/- (by post 2/3).**

RECEIVERS. A comprehensive guide to the design, construction and modification of straight and superheterodyne receivers for the amateur bands. A wealth of sound practical information. (96 pages.) **Price 3/6 (by post 3/9).**

V.H.F. TECHNIQUE. Companion volume to *Microwave Technique*, this book concisely describes modern methods and equipment in the frequency range 30-300 Mc/s., with special sections on f.m., propagation, aerial systems, and frequency measurement. (96 pages.) **Price 3/6 (by post 3/9).**

VALVE TECHNIQUE. Explains in a clear logical manner what the radio amateur needs to know about the use of modern receiving and transmitting valves, from diode to klystron, with emphasis on practical applications and circuit design data. (104 pages.) **Price 3/6 (by post 3/9).**

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Orders for the following American publications can only be accepted from residents in the United Kingdom and British Empire. Delivery requires approximately 4-6 weeks. Prices quoted include cost of postage and packing.

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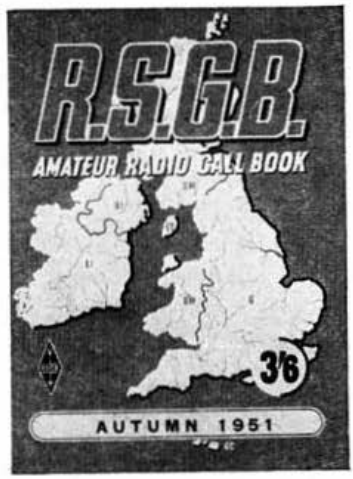
RADIO AMATEURS' HANDBOOK, 1952 Edition *(A.R.R.L.)*	**30/-**
RADIO ANTENNA MANUAL *(Editors & Engineers Inc.)*	**27/-**
SURPLUS CONVERSION MANUALS, Vol. I & II *(Editors & Engineers Inc.)* per vol.	**18/6**
ANTENNA BOOK *(A.R.R.L.)*	**11/-**
COURSE IN RADIO FUNDAMENTALS *(A.R.R.L.)*	**4/6**
HINTS AND KINKS, Vol. IV *(A.R.R.L.)*	**9/6**
T.V.I.—ITS CAUSES AND CURES *(Radio Magazines Inc.)*	**4/6**
HOW TO BECOME A RADIO AMATEUR, 11th Edition *(A.R.R.L.)*	**4/6**
LEARNING THE RADIOTELEGRAPH CODE *(A.R.R.L.)*	**2/6**

PERIODICALS

QST. Monthly journal of the *A.R.R.L.* Yearly subscription	**36/-**
CQ. Monthly publication of *Cowan Publishing Press.* Yearly subscription	**29/-**
AUDIO ENGINEERING. Monthly journal of *Radio Magazines Inc.*	**29/-**

All prices for American publications are subject to alteration without notice.



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The Inc. Radio Society of Great Britain,
Publications Dept.,
New Ruskin House, Little Russell Street,
London, W.C.1.

HEADQUARTERS CALLING

January Council Meeting

Résumé of the Minutes of the Proceedings of the Meeting of the Council of the Society held at New Ruskin House, Little Russell Street, London, W.C.1, on Tuesday, January 22, 1952, at 6 p.m.

Present.—The President (Mr. F. Charman) in the Chair, Messrs. H. A. Bartlett, L. Cooper, C. H. L. Edwards, D. A. Findlay, T. L. Herdman, J. H. Hum, F. G. Lambeth, H. McConnell, A. O. Milne, W. A. Scarr, R. Walker, P. W. Winsford and John Clarricoats (General Secretary).

* * *

Welcome to New Members.

The President extended a warm welcome to the new Members of the Council and explained that the proceedings at Meetings of the Council are confidential except for those matters which are reported upon in the Résumés of the Minutes of Meetings. Matters so reported upon should not, however, be discussed with the membership until the appropriate Résumé has been approved for publication unless the Council has decided that publicity may be given to a particular matter.

The President presented badges of office to the newly elected Members of the Council (Messrs. Bartlett, Findlay, Hum, Lambeth, McConnell and Walker) and to Messrs. W. A. Scarr (Immediate Past President), L. Cooper (Acting Vice-President) and A. O. Milne (Honorary Secretary).

Membership.

Resolved:—

(a) to elect 87 Corporate Members and 28 Associates;
(b) to grant Corporate Membership to 10 Associates who had applied for transfer;
(c) to grant Life Membership to Mr. W. E. C. Bensley, G2UN.

Applications for Affiliation.

Resolved to grant affiliation to Bletchley (R.A.F.) Amateur Radio Society, West Raynham (R.A.F.) Amateur Radio Society, Isle of Thanet Radio Society.

QSL Bureau.

Resolved to award honoraria in the total sum of £87.3.0 to the QSL Sub-Managers in appreciation of their voluntary services to the Society during the year 1951.

Dulwich & New Cross Group.

The following resolutions passed at a Meeting of the Dulwich and New Cross Group were submitted:—

(a) that this meeting records its agreement with, and full support of, the Editorial published in the November, 1951, issue of the BULLETIN;
(b) that this meeting wishes to express appreciation and thanks to the G.P.O. Liaison Committee and Technical Committee for their efforts in obtaining the concessions in the licensing conditions in the u.h.f. and v.h.f. bands during the past year.

The Secretary was instructed to write a suitable letter of thanks to the Group.

R.S.G.B. Amateur Radio Exhibition.

It was reported that a profit of approximately £75 instead of a predicted loss of £200 had been achieved.

Resolved to apply for accommodation at the Royal Hotel, London, W.C.1, for a further four-day Exhibition during the period November 24-29, 1952.

Annual General Meeting.

The Secretary submitted a copy of the notes which Mr. Basil Wardman used when speaking at the last Annual General Meeting of the Society.

Official Meetings.

It was agreed (a) to request the Regional Representatives to inquire from their C.R.s whether Regional or County Meetings are likely to attract the best support during 1952; (b) to invite the Scottish Regional Representatives to consider the question of organising a Scottish Convention during 1952.

Empire DX Certificate.

Resolved not to issue a simple form of Empire DX Certificate to those who have qualified but have not been members of the R.S.G.B. for the required period of three years.

Mr. Arthur Watts.

The President submitted a letter from Mr. Arthur Watts, G6UN (Past President), together with his reply. Mr. Watts' letter dealt with the last two A.G.M.s and with the policy of past Councils.

Capt. Kurt Carlsen.

The following resolution passed at a meeting of the Southampton Group was submitted:

"Resolved to propose to the Council that Captain Kurt Carlsen of S.S. 'Flying Enterprise' be offered Honorary Life Membership of the Radio Society of Great Britain as a token of members' esteem and admiration of his outstanding courage and resourcefulness."

The Secretary stated that he had explained to the Southampton T.R. as well as to others who had put forward suggestions similar to that contained in the resolution, that there is no provision in the Articles of Association for conferring Honorary Membership on more than one person in any one year and that it is the usual custom of the Council to confer that honour on Past Presidents and other distinguished members. The Secretary explained to the Council that Life Membership may only be granted to a person who is already a member of the R.S.G.B. Capt. Carlsen is not a member.

Resolved to take no action on the resolution submitted on behalf of the Southampton Group.

The Secretary submitted a "Letter to the Editor" from Mr. H. T. Lunson suggesting "that when the Articles of Association are redrafted, provision should be made for honouring a non-member or member who, in the opinion of the Council, has by his actions brought great credit to the Amateur Movement generally."

Resolved to advise Mr. Lunson that his suggestion will be borne in mind by the Council when the redraft of the appropriate Articles is considered.

British Amateur Television Club.

The Secretary reported that the Honorary Secretary of the B.A.T.C. had agreed to prepare a bi-monthly article on Amateur Television topics for publication in the BULLETIN.

Meeting with G.P.O.

The Secretary submitted a full report of a meeting between representatives of the Society and the G.P.O. It was stated that, as a result of the meeting, the G.P.O. had agreed to approach the Radio Industry Council and the British Radio Equipment Manufacturers' Association to ascertain what steps, if any, have been taken by manufacturers to improve the design of television receivers, in order to overcome the effects of interference to television caused by amateur and other transmissions It was further reported that the G.P.O. is unable to accept, as a definite policy, the recommendations set out in a memorandum prepared by certain London members of the R.S.G.B., in respect to Condition 12 of the Amateur Licence. An assurance had, however, been given that the G.P.O. would continue, as in the past, to do everything possible to assist amateurs to overcome their interference problems.

It was also reported that the G.P.O. had agreed to set up a small Working Group to give further consideration to matters discussed at the meeting regarding the proposal that qualified persons should be allowed to operate amateur stations on board ship. The Society would be represented on the Working Group.

Cash Account and Balance Sheet.

Resolved to receive and adopt the Cash Account for the month of December, 1951, and the Balance Sheet for the quarter ended December 31, 1951.

Constitution of Committees.

The following Members were appointed to serve on Committees of the Council for 1952:—

Contests.—Messrs. T. L. Herdman, F. G. Lambeth and R. Walker, with power to co-opt.

Finance and Staff.—Messrs. L. Cooper, C. H. L. Edwards, D. A. Findlay, A. O. Milne, W. A. Scarr, P. W. Winsford and A. J. H. Watson.

G.P.O. Liaison.—Messrs. F. Charman, S. K. Lewer and W. A. Scarr.

Membership and Representation.—Messrs. H. A. Bartlett, C. H. L. Edwards, F. G. Lambeth and H. McConnell.

Region I Bureau.—Messrs. L. Cooper, T. L. Herdman, S. K. Lewer, H. McConnell, A. O. Milne and W. A. Scarr.

Technical.—Messrs. W. H. Allen, H. A. M. Clark, L. Cooper, D. N. Corfield, C. H. L. Edwards, R. H. Hammans, T. L. Herdman, J. H. Hum, S. K. Lewer, J. W. Mathews and A. O. Milne, with power to co-opt.

A motion to reconstitute the General Purposes Committee under the title of Planning Committee was lost.

Contests Committee Report.

The Council accepted in principle a recommendation of the Committee that N.F.D. Rules be changed so that "A" stations operate on the 1.7 and 7 Mc/s bands and "B" stations on the 3.5 and 14 Mc/s. It was agreed to recommend the Committee to introduce the change in 1953 and to publish a notice of intention prior to the date of the 1952 event.

It was agreed to thank the Netherland Society (V.E.R.O.N.) for organising, checking and reporting upon the 1951 European (I.A.R.U.) V.H.F. Contest.

The Meeting terminated at 10.5 p.m.

REGIONAL AND CLUB NEWS

Acton, Brentford & Chiswick Radio Club

This new club, formed from an R.S.G.B. Group, meets on Tuesdays at 7.30 p.m. in the A.E.U. Rooms, 66-68 High Road, Chiswick, London, W.4. Rules were formulated at a special meeting held in January. Affiliation to the R.S.G.B. is the ultimate objective. Chairman : L. Skipper (G4LS); Hon. Secretary : R. G. Hindes, B.R.S. 6275. Highlight of a recent meeting was a lecture and demonstration by J. Tovell (G5LQ) on a two-metre converter using three 6J6 valves.

Bournemouth Radio & Television Society

At the recent A.G.M. the following Officers were elected : Chairman, F. Hamshere ; Vice-Chairman, J. Ashford ; Hon. Treasurer, J. Glass; Hon. Secretary, Major H. W. Inchbold Stevens (47 New Road, Northbourne, Bournemouth). A visit to the Central Fire Station will take place on March 21 (7.30 p.m.), and a Ladies' Night will be held on March 22. The club station (call G3FVU) operates on " Top Band " every Friday evening.

Brighton & District Radio Club

Members of the club recently exhibited a selection of home-constructed gear and operated an amateur station (call G3EVE/A) at a local Home Hobbies Exhibition. Film strip lectures and talks by members on their equipment are features of the current programme, details of which may be obtained from the Hon. Secretary : R. T. Parsons, 14 Carlyle Avenue, Brighton 7.

Bristol

At the February meeting H. W. Shipton (B.R.S. 10762) spoke on " The Brain as a Piece of Communications Equipment," and at a later date demonstrated to a party of 33 members the electronic apparatus used for brain research at the Burden Neurological Institute. On March 21 J. F. Salisbury (G8GB) will describe and demonstrate his T.V.I.-proof transmitter and electronic " Bug " key. The Group beat the Bristol branch of I.S.W.L. by 19 points in a game of skittles last month ; a return match is planned for March 25 at the Redcliffe Community Centre.

British Two Call Club

The Officers for 1952 include P. Sawyer (G3BYF) President, S/Ldr. H. E. Bennett (G8PF), Vice-President; and G. I. Turner (G3DGN), London Section Chairman. Club membership is open to all British Commonwealth subjects who have held call signs in two or more recognised countries. Subscription (which includes the newsletter) is 2/6 annually. Hon. Secretary : G. V. Haylock (G2DHV), 63 Lewisham Hill, London, S.E.13.

Chester & District Amateur Radio Society

Nostalgic memories will be revived for old-timers on March 18, when J. W. Swinnerton (G2YS) will talk on "Those Were the Days." The meeting on March 25 will feature a talk by G3IRW. The Annual Dinner will be held on April 4. Hon. Secretary : W. Lloyd, 124 Tarvin Road, Chester.

City & Guilds College Radio Society

More than 120 members were present when Sir Archibald Gill, B.Sc.(Eng.), M.I.E.E., delivered his Presidential Address to the Society on February 18. Sir Archibald, who was until recently Engineer-in-Chief of the G.P.O., chose as his subject " A Review of Communications Over Four Decades."

At the Annual Dinner, which followed the Presidential Address, the chief speakers were the Student Chairman (J. A. Fredericks), R. L. Smith-Rose, D.Sc., M.I.E.E., F.I.R.E., F.C.G.I., C. E. Strong, O.B.E., B.A.I., M.I.E.E., the Hon. Secretary (M. C. Hately), D. S. Larner, and Willis Jackson, D.Sc., D.Phil., M.I.E.E. (Professor in Electrical Engineering at Imperial College).

Among the large number of guests were Harold Bishop (Chief Engineer, B.B.C.), W. K. Brasher (Secretary, I.E.E.), and John Clarricoats (Secretary, R.S.G.B.).

Coventry Amateur Radio Society

During recent weeks the programme included the Mullard film-strip " Cathode-ray Tube Manufacture," a debate on " S-Meters and the R.S.T. Code," and a talk on " Frequency Modulation " by W. Grimbaldeston (G6WH). A transmitting contest was held on February 10. Future plans include the following lectures : " 25 Years of Amateur Radio " by L. W. Gardner, G5GR (March 17); " Antennas " by F. Bowman, G3FAB (March 31); " Communications Receivers " (April 28).

Cray Valley

The first meeting of the newly formed Cray Valley R.S.G.B. Group will be held on March 18 at 7.15 p.m. in the Broadway Cafe, Southend Crescent, High Street, Eltham, S.E.9, when N.F.D. plans will be discussed. Members (transmitting and B.R.S.) in the area who wish to assist in this event are invited to attend the meeting, or communicate with the T.R.—P. Woodhouse (G2BQY), 41 Orchard Rise East, Sidcup, Kent.

Darlington & District Amateur Radio Society

At the recent A.G.M. the following Officers were elected : President, C. Sharp; Chairman, R. Hale; Hon. Treasurer, E. Sutton (G8IA); Hon. Secretary, D. Graham ; Asst. Hon. Secretary, P. Lucas (G3BQJ), who is also T.R. for Darlington. The club transmitter is now operating from the Society's headquarters after its outstanding performance at the Festival Exhibition.

Derby

A meeting to discuss N.F.D. will be held on Friday, March 21, in the Committee Rooms, Post Office Telephones Sports and Social Club, 50A Sadler Gate, Derby, commencing 7.45 p.m. All local R.S.G.B. members will be welcomed.

East Surrey Radio Club

Visitors to the first of the monthly technical meetings for 1952, held at the club's new headquarters—The Old County Police Station, 19 London Road, Reigate—included J. Haydon (G3BLP) and R. L. Glaisher (G6LX), who lectured on " Basic Valve Circuits." Hon Secretary : L. G. Knight, Radiohme, 6 Madeira Walk, Reigate.

Edinburgh Amateur Radio Club

The club continues to meet weekly on Wednesdays at 7.30 p.m. in Unity House, Hillside Crescent, Edinburgh. A successful and well-attended dance was held last month, and it has been decided to make this an annual function. Talks planned for future meetings include : " Visual Receiver Alignment " (March 19); " Television " (April 2); " Modulation " (April 16); and " Telemetrics " (April 30).

Ilford & District Radio Society

Activities continue strongly and unabated as they have done without intermission since 1922, and membership continues to grow steadily. Highlights of recent meetings were lectures by G. V. King on " Television Theory," and John Clarricoats (G6CL) on " The History and Development of the Amateur Radio Movement." The future programme includes a talk by A. J. Tyrrell of Mullards (March 20); a junk sale (March 27); " Capacitors," a talk by A. Cozens of T.C.C. (April 3); " Radio Valves, Manufacture and History " by G. P. Thwaites of Standard Telephones and Cables (April 10); and " Technical Articles and Books," a talk by G. Parr of Chapman and Hall (April 17). Meetings are held at 8 p.m. in the Church Hall, St. Alban's Church, Albert Road, Ilford.

Ipswich

The Ipswich Group now meets on the second and last Wednesday each month, and welcomes everyone interested in Amateur Radio. The first meeting of the month is primarily for instruction in Morse and basic radio theory, with demonstrations and talks on amateur-built gear. The second meeting is normally reserved for a lecture by an expert.

Isle of Thanet Radio Society

Meetings of the Society, which has recently been granted affiliation to the R.S.G.B., are held on Friday evenings at the George Hotel, Hawley Street, Margate. In addition, the club premises are open to members every evening of the week. Membership is spread over a considerable area in North-East Kent. Plans are in hand for an attractive series of programmes for the summer. Hon. Secretary: J. P. Barnes (G3BKT), 18 Grange Road, Margate.

Kingston & District Amateur Radio Society

A large audience gathered at Penrhyn House, Kingston, on February 27 to hear the General Secretary of the R.S.G.B. lecture on " The History and Development of Amateur Radio." The President had the support of V. J. Mayhead (Chairman), Leslie Cooper (Executive Vice-President, R.S.G.B.), and F. G. Lambeth (R.S.G.B. Council Member and South West London D.R.). A number of Old Timers whose interest in Amateur Radio dates back to the days before the 1914-18 war were also present.

A talk on 70 cm work was given at a recent meeting by A. Cockle, G3IEE. Details of future meetings can be obtained from the Hon. Secretary: R. S. Babbs (G3GVU), 28 Grove Lane, Kingston, Surrey.

Leicester Radio Society

Recent activities included a " Radio Quiz," a talk and demonstration of " The Mini-four," and a junk sale. On April 7 R. Weston (G2BVW) will lecture on " Tuned Circuits," and on May 5 the speaker will be C. L. Wright (G3CCA), who will discuss " Frequency Modulation." A full programme of activities may be obtained on application from the Hon. Sec., A. L. Milnethorpe (G2FMO), 3 Winster Drive, Thurmaston, near Leicester.

North Kent Radio Society

At a recent enjoyable social gathering the ladies lectured the men-folk on "Ham Radio"! At the A.G.M. held in January K. Chapman (G3HOZ) was elected chairman, and C. J. Leal, 1 Deepdene Road, Welling, Kent, Hon. Secretary. The club station G3ENT operates on the "Top Band." Meetings are held on the second and fourth Mondays in each month.

Plymouth

Members of the Plymouth Group with their ladies attended the Annual Dinner and Dance at the Connaught Rooms on February 1. The success of this happy occasion was due mainly to the efforts of Mr. and Mrs. C. Teal in arranging many novel games for an amusing selection of prizes.

Portsmouth & District Radio Society

Talks with demonstrations were given recently by S. Howard, M. P. Nicholson (G2MN) and D. Metcalf (G3GHQ). Meetings are held on Tuesdays at the R.N. Barracks, Eastney, Portsmouth. At the meeting to be held on April 22 the General Secretary of the R.S.G.B. will speak on "The History and Development of Amateur Radio."

R.A.F. Locking Amateur Radio Club

At a recent meeting it was decided to change the title of No. 1 Radio School Amateur Radio Society to the above form (call sign G3IRS). This change is intended to avoid confusion with Headquarters R.A.F. Amateur Radio Society (call sign G8FN) which recently moved to Locking. The Hon. Sec. is W/O. G. A. Williams, 47 Married Quarters, R.A.F. Locking, near Weston-super-Mare.

Ravensbourne Amateur Radio Club

Club members, under the supervision of the Chairman, G. V. Haylock (G2DHV), are to hold an exhibition of home-constructed Amateur Radio equipment at the Lewisham Men's Institute, Holbeach Road School, Catford, S.E.6, on Saturday, March 29; and at the Downham Men's Institute, Durham Hill School, Downham, on Saturday, May 17. Visitors will be welcomed to both exhibitions.

Classes in radio theory are held every Wednesday evening at the above-named Institutes. The club transmitter (call G3HEV) will be in operation, and a canteen is available. Hon. Secretary: W. H. J. Wilshaw, 4 Station Road, Bromley, Kent.

Slade Radio Society

Recent meetings featured a lecture on and demonstration of "Coil 'Q'" and a discussion on direction finding. Preliminary arrangements have been made for this year's D/F contest. Meetings are held on alternate Fridays at the Parochial Hall, Broomfield Road, Erdington, Birmingham.

Southend & District Radio Society

At the A.G.M. held in January the following Officers were elected: Chairman and Hon. Treasurer, E. H. Bridges; Vice-Chairman, J. E. Nickless, A.M.I.E.E. (G2KT); Hon. Secretary, S. E. Stevenson (G3GYW); Hon. Assist. Secretary, Miss Pat Jones. "Transmitters for Beginners" was the title of a talk by S. Smith (G3BSI) at the February meeting.

South Manchester Radio Club

The club is now installed in its new premises at Ladybarn House, Mauldeth Road, and the club station (call G3FVA) is on the air. On March 28 E. W. Taylor (G2ALN) will lecture on "Receivers." Hon Secretary: F. H. Hudson, 21 Ashbourne Road, Stretford, Manchester.

Stockport Radio Society

The Society (which in its original form was started after the 1914-18 war) is now active again after a lapse of five years. Attendance at the first meeting held last month was 27, of whom 22 were transmitting amateurs. A film, "How Television Works," was shown on February 26. Meetings are held on alternate Tuesdays, commencing 8 p.m., at the Blossoms Hotel, Buxton Road. Hon. Secretary: G. R. Phillips (G3FYE), 7 Germans Buildings, Buxton Road, Stockport.

Torbay Amateur Radio Society

R. J. Whitnall, Hon. Technical Adviser to the Torquay Gramophone Society, recently lectured on "Links in the High Quality Chain." "Propagation" will be the subject of a talk by R. Hope (G3AUS) at the April meeting. The Society meets at 7.30 p.m. on the third Saturday in each month at the Y.M.C.A., Castle Road.

Warrington & District Radio Society

G. Leigh (G2FCV) was recently elected Chairman. On April 1 A. Rainous (W7OFU) will speak about "Radar Principles," to be followed on May 6 by a talk on two metre work by G. Leigh (G2FVC). Hon. Secretary: S. Woods (G3EZX), 12 Thelwall Lane, Latchford.

FACTS . . .

About International Affairs

- *The Society was represented at the International Telecommunications Conferences held in Madrid (1932), Cairo (1938), and Atlantic City (1947). The cost of representation was borne either by the appointed delegate or by the Society.*
- *The Society helped to found the International Amateur Radio Union in 1925. At the 25th Anniversary Congress of the Union (Paris, 1950) the Society was invited by the unanimous vote of the European Societies there represented to organise the Region 1 Bureau.*
- *The Region 1 Bureau is designed to co-ordinate the activities and safeguard the interests of radio amateurs in Europe.*

. . . NOT FANCIES!

Around the Trade

An all-wave mains suppressor (Type S.R.1), for use in places where reception is marred by interference from nearby domestic and industrial electrical apparatus, is now being manufactured by E.M.I Sales and Service, Ltd. Housed in a moulded case and designed for simple fixing to a skirting board, the suppressor incorporates a mains plug and socket to facilitate interconnection between receiver and supply point. It is effective at all frequencies from 150 kc/s to 30 Mc/s, and is suitable for use with any receiver or appliance operating on 100-250 V a.c. or d.c. and drawing up to 5 A of current.

* * *

A special plug and socket designed for 300-ohm ribbon feeder, as used extensively by radio amateurs, is now available to order from Messrs. Belling-Lee. The reference numbers are L677/P and L677/J for the plug and socket respectively.

Can You Help?

W. R. Metcalfe (G3DQ), Mylor Dockyard, Flushing, Falmouth, who requires the circuit diagrams of the ex-Army "Sender 33" and the ex-U.S. aircraft transmitter RVT15B?

Silent Keys

The sudden death of Frank Cropper, G6XS, of Ashton-under-Lyne, at the age of 53 years, will come as a great shock to his many friends in Amateur Radio circles throughout the world.

Although content to limit himself to an input of some 30 watts, he had made a name for himself among DX workers and was a holder of the Empire DX Award. Incidentally we believe he was the first holder of this distinction to pass on.

Frank was a man of great personal charm, a genial cheery fellow, who always seemed to be happy and had the rare gift of imbuing those with whom he came in contact with some of his own natural cheerfulness.

He was a prolific and entertaining correspondent, and many of us will sadly miss those regular letters so full of wit and sound northern common sense.

He was one of those of whom it may truly be said that the world is the poorer for his passing. To his wife and relatives we offer our sincere sympathy in their great loss. G2MI.

* * *

Members of the Thornton Heath Radio Club, S.R.C.C. and S.L.D.R.T.S. in particular, will be sorry to learn of the death, after a long illness, of Mr. W. C. Keasley, of Sanderstead, Surrey. Prior to the last war Mr. Keasley held the Artificial Aerial call, 2BHL, but in more recent years he had confined his attentions to constructional work and listening.

Sympathies are extended to his widow, relatives and close friends. G2DP.

AFFILIATED SOCIETIES

The following Clubs and Societies were affiliated to the Radio Society of Great Britain as at March 1st, 1952

ADMIRALTY ELECTRONICS SOCIETY, c/o Mr. W. J. Green Arrochar, Bloomfield Avenue, Bath, Somerset.
ARIEL RADIO GROUP, Bush House Section, B.B.C. Club, c/o Mr. W. J. Hayes, Bush House, Aldwych, London, W.C.2
* **A.S.T. AMATEUR RADIO SOCIETY,** c/o Mr. J. N. Tracey, Air Service Training Mess, Hamble, Southampton, Hants.
* **AUSTIN RADIO & TELEVISION SOCIETY,** c/o Mr. R. D. Dixon, Longbridge Works, Birmingham 31.
BABCOCK & WILCOX STAFF ASSOCIATION RADIO SOCIETY, c/o Mr. L. E. J. Manders, Babcock House, Farringdon Street, London, E.C.4.
BALDOCK RADIO SOCIETY, c/o Mr. A. W. Fussell, 6 Clare Crescent, Baldock, Herts.
BARNET & DISTRICT RADIO CLUB, c/o Mr. A. D. Cliff, Hopedene, The Avenue, Barnet, Herts.
BARROW AMATEUR RADIO & TELEVISION SOCIETY, c/o Mr. J. G. Jackson, 1 Highfield Road, Barrow-in-Furness, Lancs.
BOURNEMOUTH RADIO & TELEVISION SOCIETY, c/o Major W. H. Inchbold Stevens, 47 New Road, Northbourne, Bournemouth, Hants.
BRADFORD AMATEUR RADIO SOCIETY, c/o Mr. A. W. Walmsley, 6 Hilton Road, Legrams Lane, Bradford, Yorkshire.
* **BRENTWOOD & DISTRICT AMATEUR RADIO SOCIETY,** c/o Mr. C. A. Nightingale, 39 Westwood Avenue, Brentwood, Essex.
* **BRIGHTON & DISTRICT RADIO CLUB,** c/o Mr. R. T. Parsons, 14 Carlyle Avenue, Brighton.
BRITANNIA RADIO CLUB, c/o Hon. Secretary, Royal Naval College, Dartmouth, Devon.
* **B.T.H. SOCIAL & ATHLETIC CLUB (RADIO & TELEVISION SECTION),** c/o Hon. Secretary, Lower Ford Street, Coventry.
B.T.H. RECREATION CLUB (RADIO & TELEVISION SECTION), c/o Mr. P. N. Prior, B.T.H. Recreation Club, Rugby
CAMBRIDGE & DISTRICT AMATEUR RADIO CLUB, c/o Mr. T. A. T. Davies, Meadow Side, Comberton, Cambridge.
* **CATTERICK AMATEUR RADIO CLUB,** c/o Mr. J. Phelps, No. 2 Squadron, 1st Trg. Regiment, R. Signals, Catterick Camp, Yorkshire.
CHELTENHAM AMATEUR RADIO SOCIETY, c/o Mr. F. W. Humphries, 8b Elmfield Avenue, Cheltenham, Glos.
CHESTER & DISTRICT AMATEUR RADIO SOCIETY, c/o Mr. W. G. Lloyd, 124 Tarvin Road, Chester.
CITY & GUILDS COLLEGE RADIO SOCIETY, c/o Mr. M. C. Hateley, City and Guilds College, Exhibition Road, London, S.W.7.
CITY OF BELFAST Y.M.C.A. RADIO CLUB, c/o Mr. H. J. Campbell, 36 Lisburn Avenue, Belfast, N. Ireland.
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COVENTRY AMATEUR RADIO SOCIETY, c/o Mr. K. G. Lines 142 Shorncliffe Road, Coventry.
DARLINGTON & DISTRICT AMATEUR RADIO SOCIETY, c/o Mr. D. Graham, 21 Hamsterly Street, Darlington, Co. Durham.
DERBY & DISTRICT AMATEUR RADIO SOCIETY, c/o Mr. E. Shimmin, 74 Derby Lane, Derby.
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FACULTY OF TECHNOLOGY AMATEUR RADIO SOCIETY, c/o Mr. M. J. Fadil, College of Technology, Sackville Street Manchester.
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GRAFTON RADIO SOCIETY, c/o Mr. W. H. C. Jennings, Grafton School, Eburne Road, London N.7.
GRAVESEND AMATEUR RADIO SOCIETY, c/o Mr. R. E Appleton, 23 Laurel Avenue, Gravesend, Kent.
GRAYS & DISTRICT AMATEUR RADIO SOCIETY, c/o Mr. C. Mundy, 68 Chestnut Avenue, Grays, Essex.
HARLOW & DISTRICT RADIO SOCIETY, c/o Mr. H. I. Wright, Allandale, Start Hill, Bishops Stortford, Herts.
* **HARROW RADIO SOCIETY,** c/o Mr. S. C. Phillips, 131 Belmont Road, Harrow Weald, Middlesex.
ILFORD & DISTRICT RADIO SOCIETY, c/o Mr. C. E. Largen, 44 Trelawny Road, Barkingside, Ilford, Essex.
ISLE OF MAN AMATEUR RADIO SOCIETY, c/o Mr. H. Grist, Broadway House, Broadway, Douglas, Isle of Man.
ISLE OF THANET RADIO SOCIETY, c/o Mr. J. P. Barnes, 18 Grange Road, Ramsgate, Kent.
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* **KYNOCH RADIO & TELEVISION SOCIETY,** c/o Mr. G. E. Nicholls, Time and Work Study Dept., I.C.I. Ltd., Elliott Works, Selly Oak, Birmingham 29.
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LEICESTER RADIO SOCIETY, c/o Mr. A. L. Milnthorpe, 3 Winster Drive, Thurmaston, Leicester.
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MANSFIELD DISTRICT RADIO SOCIETY, c/o Mr. A. W. Fowler, Windsor, Cowpasture Lane, Sutton-in-Ashfield, Notts.
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* **MERSEYSIDE WIRELESS TRANSMITTING AMATEUR SOCIETY,** c/o Mr. S. Orr, 2 Argyle Road, Anfield, Liverpool 4, Lancs.
* **MID KENT AMATEUR RADIO SOCIETY,** c/o Mr. D. A. Mullen, 44 Sussex Road, Maidstone, Kent.
MIDLAND AMATEUR RADIO SOCIETY, c/o Mr. G. W. C. Smith, 18 Highbury Road, Kings Heath, Birmingham 14.
MURPHY RADIO SPORTS CLUB (RADIO SECTION), c/o Mr. R. Stevenson, Murphy Radio Ltd., Broadwater Road, Welwyn Garden City, Herts.
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NORTH KENT RADIO SOCIETY, c/o Mr. C. J. Leal, 1 Deepdene Road, Welling, Kent.
NORTH WEST KENT AMATEUR RADIO SOCIETY, c/o M. J. Frost, 15 Northbourne, Hayes, Bromley, Kent.
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OXFORD & DISTRICT AMATEUR RADIO SOCIETY, c/o Mr. J. Hickling, 47 Banbury Road, Oxford.
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ST. ATHAN AMATEUR RADIO SOCIETY, c/o 573450 S/T. Nutty, H., Sgts. Mess, 32 M.U., R.A.F. St. Athan, Barry, Glam., Wales.
STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY, c/o Mr. W. A. Higgins, 28 Kingsley Road, Kingswinford, Brierley Hill, Staffs.
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SWANTON MORLEY AMATEUR RADIO CLUB, c/o F/Lt. A. E. White, R.A.F. Swanton Morley, Dereham, Norfolk.
TAUNTON & WEST SOMERSET RADIO SOCIETY, c/o Mr. H. E. J. Burton, 33 Richmond Road, Taunton, Som.
THAMES VALLEY AMATEUR RADIO TRANSMITTERS' SOCIETY, c/o Mr. K. A. H. Rogers, 21 Links Road, Epsom, Surrey.
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WANSTEAD & WOODFORD RADIO SOCIETY, c/o Mr. J. Binning, 150 Upton Park Road, Forest Gate, London, E.7.
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WEST CORNWALL RADIO CLUB, c/o Mr. R. V. Allbright, 12 North Parade, Penzance, Cornwall.
* **WEST MIDDLESEX RADIO CLUB,** c/o Mr. P. F. Blomfield, 213 Harrow View, Harrow, Middlesex.
WEST RAYNHAM AMATEUR RADIO SOCIETY, c/o Sgt. Aveling, R.A.F. Station, West Raynham, Fakenham, Norfolk.
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WIRRAL AMATEUR RADIO SOCIETY, c/o Mr. A. H. Watts, 14 Grange Crescent, Hooton, Wirral, Cheshire.
* **WOOLWICH RADIO SOCIETY,** c/o Mr. A. J. Burch, 60 Suteliffe Road, London, S.E.18.
* **WORTHING & DISTRICT AMATEUR RADIO CLUB,** c/o Mr. F. H. Betterly, 42 Anwier Avenue, Lancing, Sussex.
WREKIN AMATEUR RADIO SOCIETY, c/o Mr. J. C. Tranter, 78 New Street, Wellington, Shropshire.
YEOVIL AMATEUR RADIO CLUB, c/o Mr. D. McLean, 9 Cedar Grove, Yeovil, Somerset.

** Denotes Secretary's name and address subject to confirmation.*

NEW BOOKS

ELECTRICAL INSTRUMENTS AND MEASUREMENTS (No. 5 in the Cleaver-Hume Electrical Series). By W. Alexander, M.Sc., B.Sc.(Eng.), M.I.E.E. Page size 7¼" x 4¾". 352 pages, 112 illustrations. Published by Cleaver Hume Press Ltd., London, W.1. Price 12/6.

This new book—written by a Lecturer in Electrical Engineering at the University of Nottingham—gives a clear and detailed account of the instruments and test sets used for measuring current, voltage, resistance, power factor, energy, insulation and continuity. Installation testing is also covered.

The book contains more than 100 half-tones and line blocks and, like others in the same series, embraces a comprehensive range of test questions and answers.

Students preparing for the appropriate City and Guilds of London Institute and similar examinations will find the book of immense value. Its detailed descriptions and reference tables should also commend it to practising radio and electrical engineers.

MICROPHONES. By the staff of the Engineering Training Dept. B.B.C. Page size 8¼" x 5¼". 114 pages, 78 illustrations. Published for "Wireless World" by Iliffe & Sons, Ltd. Price 15/-.

Originally written for use in training B.B.C. engineers, this book should prove of interest and value to all concerned with microphones in sound engineering.

The requirements for microphones in a broadcasting studio are set out in an introductory chapter, and this is followed by chapters covering the laws relating to sound waves and their behaviour. Details are given of the ribbon, moving-coil, crystal and condenser instruments that have been used in British broadcasting studios during recent years.

The specialised nature of this book assumes that the reader already has a basic knowledge of electrical engineering and, in particular, of alternating current theory.

ELECTRONIC VALVES—Book V (Vol. II). Application of the Electronic Valve in Radio Receivers and Amplifiers. By B. G. Dammers, J. Haanjtes, J. Otte and H. Van Suchtelen. Page size 9¼" x 6¼"; 450 pages, 343 illustrations. Distributed in Great Britain by Cleaver Hume Press Ltd., London. Price 45/-.

This is the second of two volumes in the *Philips Technical Library* series dealing with modern valve applications in receivers and amplifiers.

The present volume covers Audio Frequency Amplification, The Output Stage and Power Supply. The companion volume (referred to on p.473 of the June 1951 issue of the BULLETIN) covers R.F. and I.F. Amplification, Frequency Changing, Oscillator Tracking, Distortion and Detection.

Vol. III—in course of preparation—will cover Inverse Feed-Back, A.V.G., A.F.C., Coatrast Expansion and Compression, Stability and Instability of Circuits, etc., etc.

ELECTRONIC VALVES—Book VI. Transmitting Valves—The Use of Pentodes, Tetrodes and Triodes in Transmitter Circuits. By J. P. Heyboer and P. Zijlstra. Page size 9¼" x 6¼"; 308 pages, 256 diagrams and numerous tables. Distributed in Great Britain by Cleaver Hume Press Ltd., London. Price 35/-.

This, the sixth book in the *Philips Technical Library*, is one of the very few to deal exclusively with transmitting valves and the theory of the circuitry associated with them. For that reason alone it should appeal to the advanced radio amateur as well as to the professional radio engineer. The various uses of transmitting valves as amplifiers, modulators, oscillators and frequency multipliers are presented in a clear and logical manner. The text is illustrated with line diagrams and half tone blocks

The high standard of production noted in previous books in this series has been well maintained.

WORLD RADIO HANDBOOK 1952, Published and edited by O. Luna Johansen, with the support of the Danish Society. Printed in Denmark. Page size 8¼" x 6¼". Distributed in Great Britain by Surridge Dawson & Co., Ltd., London, S.E.1. Price 8/6.

This handbook claims to list every broadcasting station in the world—long, medium and short wave—and gives details of the call sign, wavelengths, interval signals, announcements and transmissions of each station. There is also an abundance of supplementary information of interest to the enthusiastic broadcast listener who strives to receive remote places.

Mr. Johansen is to be congratulated on amassing such a wealth of detailed information between the covers of this 120 page Handbook.

Contests Diary

March 29-30	B.E.R.U. (Telegraphy)
April 5-6	B.E.R.U. (Telephony)
May 10-11	144 Mc/s Field Day (No. 1)
June 7-8	National Field Day
June 22	420 Mc/s Tests
July 6	European V.H.F.
July 26-27	144 Mc/s Open Event
September 7	Lower Power Field Day
September 21	144 Mc/s Field Day (No. 2)
October 4-5	Low Power
November 8-9	"Top Band" (No. 2)

LETTERS TO THE EDITOR

The Society assumes no responsibility for the views expressed herein by correspondents.

More About the Question of Power

DEAR SIR,—I most strongly disagree with the suggestion of Mr. Basil Wardman, G5GQ (December, 1951, issue) for raising the maximum power input for U.K. amateur stations to 1 kW. Although Mr. Wardman used a number of arguments to support his plea for a "realistic power ceiling," I think that many of them are either illogical or incorrect.

Firstly, consider the position in the U.S.A., which Mr. Wardman states he has been in a position to examine "on the spot." I wonder if he has read *QST*? If so, he will have seen letters, similar to the one from G3ESP published in the October, 1951, BULLETIN, suggesting a greater measure of control over power input. Other letters have complained that too many operators use inputs from 4-5 kW. All of which has led A.R.R.L. to voice their condemnation of those amateurs who exceed the statutory limit. One may therefore conclude that *if* the power input *were* raised in the U.K. to 1 kW., certain "clever types" would exceed it.

Secondly, I wonder how many stations would be operated at a power of 1 kW., if that figure were allowed. Mr. Wardman suggested that—following his U.S. experience—the number would be very, very small. However, from an examination of QSL's from the U.S.A. received by me and other local operators, I estimate that about one in every five American c.w. operators uses an input of up to 1 kW. Admittedly, many such operators use crystal control.

Would the financial aspect have any great effect if the input limit were raised to 1 kW.? Although G5GQ thinks so, I don't, and for various reasons. Many amateurs already spend large sums of money each year on their stations and they would propably spend more in order to raise the power input still higher. A 1 kW. c.c. c.w. transmitter would cost about the same as an "eye-pleasing" 150 W. rack and panel 'phone job, and if tetrodes were employed in the final, screen modulation could be used for 'phone operation, at little additional cost. Even if v.f.o. control were required, an 807 in an e.c.o. circuit (such as the "Wilcox-Gay" version), with a suitable buffer and doubler, would easily drive a tetrode to 1 kW. at 14 Mc/s.

Finally, may I ask—why should a person who, just because he has the skill to build a 1 kW. rig, be classed also as a good operator, or—as G5GQ puts it—a more "experienced" operator? If such were the case, then we should hear better signals than we do from overseas stations who use inputs around 1 kW.

Is G5GQ's plea for 1 kW. justified? I think not.

Yours faithfully,

Gatley, Cheshire. D. G. KING (G3EON).

DEAR SIR,—My friend Basil Wardman, G5GQ, has certainly expanded himself in sophistry, judging by his letter published in the December BULLETIN, 1951.

He is largely an anarchist, so it would appear, for he says, in effect—if a law is being broken, alter it so that no matter what one does, it does not get broken; it does not interfere with one's liberties.

As a politician would, he has deliberately played upon the emotions and not the intellect. Liberty at any cost—free the masses—away with laws and restrictions, knowing full well that it means liberty for the few and the rest—go hang.

Look at this little piece of emotionalism—"a *properly adjusted* 1 kW. transmitter causes less trouble than a *badly* built *maladjusted* 25-watt job"—and that, after saying of interference, "1 kW. rig is *little* greater risk." (I have underlined the words.) Why not a *properly* adjusted 25-watt job?—and what of a 1 kW. rig (even a little) maladjusted, as compared with a well tuned 25-watt rig? NG, of course not, he's appealing to the emotions.

He says in effect, all laws are made to be broken—the modern (?) rule for success. He knows full well (and apparently agrees with it) that it is the "wide" boys who make material success—the avoidance of restrictions, custom payments, income tax, etc. So away with restrictive laws and then we'll all be successful! What a charming piece of naïvety.

The first consideration of the G.P.O., in control, is respect for the international band widths; secondly, the control of third-party traffic. The power restriction is the "amateur's" own control and does not, primarily, interest the G.P.O., for within the realms of sensible expenditure, absolute control of power is incapable of being exercised. But that does not mean that there is no moral obligation on licence holders.

We, as amateurs, know very well that the power restrictions are being broken, and we even see awards, certificates and honours dispensed to those who break our laws—there are exceptions.

We are not born alike, neither are our fortunes similar, but in the matter of the transmitting *licence* we are equals. Anybody exercising the laws of the jungle—tooth and claw methods—is a rogue, and were we primevals, solely of the animal kingdom, the rogue would suffer the laws of Nature—extinction.

In a community trying to become civilised—trying to apply its intellect—the anarchist is a moral outcast. For the "law-of-the-jungle merchant," the breaker of laws, the subversive element, the hypocrite, there is no more fertile soil for success than in a community becoming interested in keeping laws.

A law serves the whole, not the individual; his individualism extends as far as the law and not beyond.

Anyone who exceeds his power input beyond his licence is commencing to break-down civilisation. It is he who would make a law necessary to restrict, against pain of punishment (a totalitarian method), the possession of apparatus capable of power beyond his licence conditions.

Did you notice that your heading has two rather important meanings?

Yours faithfully,

W. H. MATTHEWS (G2CD).

Seven Kings, Essex.

B.C.I. & T.V.I.

DEAR SIR,—I read with great interest the letter from Mr. N. G. Anslow (December issue) in reply to G3FYY's letter regarding B.C.I. and T.V.I.

Whilst I agree that Mr. Anslow's diagnosis of the cause of this particular form of B.C.I. is correct, it seems to me that the second remedy he recommends is an extremely unwise modification to apply and that the correct approach is by means of filters or wavetraps to reduce the level of the interfering signal at the grid of the mixer valve.

When two signals of differing frequency are applied to a mixer, it is essential for good efficiency that one of these should be of sufficient amplitude to modulate the mixer anode current fully. In normal receiver practice, this function is performed by the oscillator voltage which is large compared to the incoming signal and, in consequence, the output at the sum and difference frequencies is proportional to the weaker signal.

It can easily be shown mathematically that a mixer operating in this manner produces, not only simple sum and difference frequencies, but also a multitude of harmonics of both frequencies together with sum and difference products of these. In practice only a few of these are strong enough to be important but the fact that the majority of the harmonic content arises from the process of efficient mixing, and not by excessive lack of linearity in the oscillator circuit itself, deserves emphasis. In fact, if the waveform of the local oscillator were completely pure (*i.e.* free of harmonics), the same spurious responses would be present in the mixer output.

Reduction of the oscillator input to the mixer, as suggested by Mr. Anslow, reduces the by-products by decreasing the mixer efficiency, *i.e.*, the oscillator voltage fails to modulate the mixer anode current fully. What little mixing does still take place is due to slight non-linearity in the mixer anode current/grid voltage characteristic, similar in nature to the phenomena known to those who build high quality a.f. amplifiers as "intermodulation."

The owner of a receiver thus "doctored" could justifiably complain of the resultant loss of performance, whereas if the level of the signal at the mixer grid due to the amateur transmitter is attenuated by additional r.f. selectivity (wavetraps or low pass filter) no audible loss in receiver performance should be apparent.

Yours faithfully,

J. HAYDON (G3BLP).

Selsdon, Surrey.

Component Values: A Plea for More Details

DEAR SIR,—In certain technical articles published in the BULLETIN, pains are taken by the author to give full details regarding construction and layout of components for a piece of equipment, but when it comes to details of the components required, readers are confronted by a list of catalogue numbers in lieu of values. Page 11 of the July, 1951, issue illustrates my point. While catalogue numbers and manufacturers' descriptions are useful at times, could not authors, for the benefit of those wishing to search for the component from their own stock of parts, be asked to quote the value of the particular resistor, choke, or whatever the item may be?

A similar practice is that of designating a variable condenser as a "tuning condenser," but stating no value. While in the majority of cases the required value can be calculated, or may be known from experience, there are times when a particular value may have been found more suitable than others. In brief then, can the actual values of components used in circuits be stated in addition to any other identification? I am sure a large number of readers will support me in this request.

Yours faithfully,

A. W. GRIMSDALE (G3CJU).

Newbury, Berks.

Can You Help?

● L. Harbin, 17 Hengrove Road, Knowle, Bristol, 4, with circuit details of the Crystal Monitor, Type 2, and information about the frequencies of the crystals required for this unit.

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(Continued on Page 424)

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(Continued from Page 423)

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APPOINTMENTS SECTION

McMICHAEL RADIO LTD. require qualified and experienced men for the inspection, testing and servicing of Government radio, electronic and electrical apparatus.—Apply to Personnel Officer, Wexham Road, Slough. (216

SUPPLEMENTARY RESERVE. — Volunteers who are specialists or technicians are invited to join this Reserve, which provides the skilled men the Army needs on mobilisation. Wireless and line operators, draughtsmen, despatch riders and radio and line mechanics are among the tradesmen needed. Ex-N.C.O.s of the Royal Signals especially required. No liability for evening drills or week-end training. Maximum training liability is annual 15-day camp with Regular Army rates of pay. Annual bounty in addition. By joining the S.R a man will play a vital part in the defence of this country and will ensure that his skill is used in the event of war.—Details from any Recruiting Office or the War Office (A.C.10/SRC13), London, S.W.1. (253

WEBB'S RADIO require Senior Engineer for specialised Service Department. Must be conversant with the overhaul and alignment of communication receivers, including the provision of test figures to laboratory precision.—Write to the Manager, Webb's Radio, 14 Soho Street, London, W.1. (252

CROWN AGENTS FOR THE COLONIES.

WIRELESS STATION SUPERINTENDENT required by the Government of Nigeria for the Posts and Telegraphs Department for one tour of 18 to 24 months in the first instance with prospect of permanency. Salary (including allowances) between £711 and £1,042 a year according to qualifications and experience. Outfit allowance £60. Free passages for officer and wife and assistance towards cost of children's passage or their maintenance in this country. Liberal leave on full salary. Candidates (under 40 years) must have had wide practical experience of modern radio techniques and equipment, in particular v.h.f. equipment and preferably also v.h.f. multi-channel equipment.—Apply at once by letter, stating age, full names in block letters and full particulars of qualifications and experience and mentioning this paper to the Crown Agents for the Colonies, 4 Millbank, London, S.W.1, quoting on letter M.28927.B. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration. (274

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