R·S·G·B VOLUME 23 · No. 6 · COPYRIGHT · PRICE 1/6 DECEMBER, 1947

BULLETIN

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

- DX CONTACTS ON 50 Mc s.
- TEN-TWENTY ROTARY BEAM
- AMATEUR RADIO EXHIBITION
- ANNUAL REPORT OF COUNCIL

The Incorporated Radio Society of Great Britain

COUNCIL 1947

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Acting Vice-President – – – – – V. M. DESMOND
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Solicitors
RULE & COOKE — STANLEY JOHNSON & ALLEN

Bankers
BARCLAYS BANK LTD.

REPORT OF THE HONORARY TREASURER

HEREWITH are copies of the Society's Audited Accounts for the year ended September, 30th 1947.

It is hoped that the following comments may be of some assistance to those members who are sufficiently interested to read through the Accounts.

Income and Expenditure Account.

This Account may be said to summarise the financial operations for the year and compare them with those of the preceding year.

Income.

The gross income for the year is greater than that for the preceding year by £1,848. This increase is accounted for as follows :—

	£	£
Subscriptions	2,034	
Interest	41	
Reserves written back	6	
		2,081
Less decrease in Revenue from Sales of Publications		233
		£1,848

Revenue from Subscriptions grows of course with the rise in membership and during the year ended September 30, 1947, the reduced war-time rates were replaced by the normal pre-war subscription rates.

The Interest credited during the year represents a full year's interest on the Society's investments while for a part of the preceding year some money was on loan to the Government free of interest.

There has been a falling off in the demand for the *Amateur Radio Handbook* and *Radio Handbook Supplement* and also for American publications.

Expenditure.

The effects of inflation as well as the growth of the Society are reflected in the various items of expenditure all of which, except two, show increases.

The following table shows how the increase of £3,369 is made up :—

		£
Rent, Rates, etc.		57
Salaries, etc.		607
Telephone		19
Printing and Stationery		277
Postages		14
Representatives Expenses		126
London Meetings		26
QSL Bureau		282
Bulletin		1,754
Certificates and Badges		59
Audit and Accounts		48
Legal Charges		8
Repairs and Replacements		130
Headquarters Station		80
		3,487
Less Decreases		
Travelling and Meetings	£109	
Sundry Expenses	9	
		118
		£3,369

(continued on page 4)

Incorporated Radio Society of Great Britain, New Ru

(COMPANY LIMITE

BALANCE SHEET—30th SEPTEMBER, 1947

1946		£	£	£
£	**CURRENT LIABILITIES :—**			
	Sundry Creditors—			
530	For American Publications ...	205		
7	„ Printing Bulletin	730		
178	„ Current Expenditure accrued and owing	248		
715			1183	
	Reserves—			
5133	For Subscriptions paid in Advance	6012		
	„ Taxation 151			
	Less Tax Reserve Certificates held ... 75			
74		76		
			6088	
5207				7271
	GENERAL DEVELOPMENT RESERVE FUND :—			
	Balance of Reserve Funds at 1st			
10000	October, 1946	11000		
	Add Transfer from			
1000	Income and Expenditure Account ...	—		
			11000	
11000				
	INCOME AND EXPENDITURE ACCOUNT :—			
	Balance of Accumulated Fund as			
2034	shown by Appropriation Account...		1158	
				12158
18956				19429

1946		£	£	£
£	**CURRENT ASSETS :—**			
1481	**Cash in Hand and at Bank** ...		4845	
	Sundry Debtors—			
1084	For Sale of Publications	420		
559	„ Advertising	196		
			616	
—	**Prepayments**		77	
	Stock of Publications, etc., as			
2557	certified by General Secretary ...		616	
5681				6154
	FIXED ASSETS :—			
	Investments (at Cost)—			
5219	£5,000 3% Savings Bonds 1965–75	5219		
	£4,000 London Electric Transport Finance Corpn. Ltd. 2½%			
4055	Guaranteed Debenture Stock ...	4055		
2000	£2,000 3% Defence Bonds ...	2000		
2000	£2,000 1¼% Exchequer Bonds 1950	2000		
			13274	
	(Middle Market value at 30th September, 1947—£12,780.)			
	Furniture and Fixtures—			
1	(at Cost less Depreciation) ...		* 1	
				13275
13275				
18956				19429

S. K. LEWER, *President.*
A. J. H. WATSON, F.S.A.A., *Hon. Treasurer.*
V. M. DESMOND, *Vice-President.*
JOHN CLARRICOATS, *General Secretary.*

REPORT OF THE AUDITORS TO THE MEMBERS OF THE INCORPORATED RADIO SOCIETY OF GREAT BRITAIN

We have audited the above Balance Sheet and have obtained all the information and explanations we have required. In our opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Society's affairs as at 30th September, 1947, according to the best of our information and the explanations given to us and as shown by the Books of the Society.

Thames House,
Queen Street Place, London, E.C.4.
19th November, 1947.

EDWARD MOORE AND SONS,
Chartered Accountants.

PRISONERS-OF-WAR FUND

RECEIPTS AND PAYMENTS ACCOUNT for the Year ended 30th SEPTEMBER, 1947

RECEIPTS	Far East	General
	£	£
To Balance at Bank 1st October, 1946	62	285
„ Transfer from Far East Fund		62
	62	347

PAYMENTS	Far East	General
	£	£
By Distribution of surplus monies among ex-Prisoners-of-War		340
„ Transfer to General Fund	62	
„ Balance at Bank 30th September, 1947 ...		7
	62	347

S. K. LEWER, *President.*
A. J. H. WATSON, F.S.A.A., *Hon. Treasurer.*
V. M. DESMOND, *Vice-President.*
JOHN CLARRICOATS, *General Secretary.*

REPORT OF THE AUDITORS

We have audited the Receipts and Payments Account as set forth above and have obtained all the information and explanations we have required. We have received a certificate from the Bank confirming the balance stated above, and in our opinion the above statement presents a true and correct record of the transactions of the Prisoners-of-War Fund for the year ended 30th September, 1947, according to the best of the information and explanations given to us and as shown by the Books.

Thames House,
Queen Street Place, London, E.C.4.
19th November, 1947.

EDWARD MOORE AND SONS,
Chartered Accountants.

‹kin House, Little Russell Street, London, W.C.1.

BY GUARANTEE)

INCOME AND EXPENDITURE ACCOUNT for the Year ended 30th SEPTEMBER, 1947

1945–46		EXPENDITURE	£	£
£	£			
	449	To Rent, Rates, Light, Heat, Water and Cleaning		506
	1350	,, Salaries, Staff Pension Premiums and National Insurance		1957
	23	,, Telephone Charges		42
	431	,, Printing and Stationery		708
	308	,, Postages		322
	725	,, Travelling, Entertainment and Meetings		616
	12	,, Representatives Expenses		138
	101	,, London Meetings		127
	36	,, QSL Bureau Expenses...		318
		,, R.S.G.B. Bulletin and Technical Booklets distributed free to members :—		
		Printing Charges, etc.—		
4573		R.S.G.B. Bulletin	6370	
—		Service Valve Equivalent Booklet	463	
4573			6833	
602		Less Revenue from Advertising	1108	
	3971			5725
	39	,, Membership Certificates and Badges ...		98
	63	,, Audit and Accountancy		111
	18	,, Legal Expenses		26
	80	,, Repairs and Replacements		210
	—	,, Headquarters Station—cost of sundry equipment written off		80
	91	,, Sundry Expenses		82
	7697			11066
	108	,, Depreciation — Amount written off Furniture and Fixtures representing outlay on Equipment for the year to date		117
		,, Reserve for Income Tax on this year's		
338		Income	—	
268		Less Excess Profits Tax repayable ...	—	
	70			—
	1000	,, Transfer to General Development Reserve Fund		—
	8875			11183
	996	,, Balance, being Excess of Income over General Expenditure for the Year, carried to Appropriation Account ...		536
	9871			11719

1945–46		INCOME	£	£
£	£			
	8106	By Subscriptions		10140
		,, Income from Sales :—		
752		Sundry Publications	539	
825		Amateur Radio Handbook and Supplement	805	
—	1577		—	1344
		,, Interest Received		
		From Investments (net) :—		
43		3% Defence Bonds	33	
18		2½% National War Bonds ...	—	
18		1½% Exchequer Bonds	19	
41		3% Savings Bonds	83	
		London Electric Transport Finance Corpn. Ltd. 2½% Guaranteed		
28		Debenture Stock	55	
148			190	
5		From Tax Reserve Certificates ...	6	
14		From Bank Deposit Account ...	12	
—	167		—	208
	—	,, Income Tax—amount written back ...		27
	21	,, Profit on Sale of Investments		—
	9871			11719

APPROPRIATION ACCOUNT

	£		£
To Cost of Representation :—		By Balance from Income and Expenditure Account ...	536
World Radio Telecommunications Conference at Atlantic City, U.S.A.	1412	,, Balance of Accumulated Fund brought forward from last Account	2034
,, Balance carried forward	1158		
	2570		2570

THE PILOT OFFICER NORMAN KEITH ADAMS PRIZE TRUST FUND

BALANCE SHEET—30th SEPTEMBER, 1947

	£	s.	d.		£	s.	d.
Trust Fund	150	0	0	**Investment £150 3% Defence Bonds**	150	0	0
Provision for Prize Awards	9	0	0	**Cash at Bank**	9	0	0
	159	0	0		159	0	0

S. K. LEWER, *President.*
V. M. DESMOND, *Vice-President.*

A. J. H. WATSON, F.S.A.A., *Hon. Treasurer.*
JOHN CLARRICOATS, *General Secretary.*

REPORT OF THE AUDITORS

We have audited the Balance Sheet as set forth above and have obtained all the information and explanations we have required. In our opinion such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of affairs of the Prize Trust Fund as at 30th September, 1947, according to the best of the information and explanations given to us and as shown by the Books.

Thames House,
Queen Street Place, London, E.C.4.
19th November, 1947.

EDWARD MOORE AND SONS,
Chartered Accountants.

INCOME AND EXPENDITURE ACCOUNT for the Year ended 30th SEPTEMBER, 1947

	£	s.	d.		£	s.	d.
To Provision for prizes awarded for the year ended 30th June, 1947, under a Council Resolution dated 13th October, 1947	9	0	0	By Interest on Investment	4	10	0
				,, Balance of Undistributed Income from previous year	4	10	0
	9	0	0		9	0	0

General.

In the preceding year, after meeting the ordinary expenditure for the year we were able to transfer £1,000 to Reserve and show a surplus of nearly £1,000. The past year's results show however that after meeting the ordinary expenditure for the year there is a surplus left of only £536 which has been used to defray partly the cost of sending two delegates to the World Radio Telecommunications Conference at Atlantic City, U.S.A., the balance of £876 having had to be met out of the Society's reserves.

Leaving out of consideration the cost of the Atlantic City Conference no surplus at all on the year's working would have been shown if there had not been a saving of a few hundred pounds owing to the cessation of Regional Notes and the fact that neither a Technical Manager nor an assistant to the General Secretary was engaged prior to September 30, 1947.

The Future.

I see no reason to assume that any of the items of expenditure will be any less during the current year than they were in the past year. In fact there is every reason for assuming that many of them will show still further increases. For example, the charge for salaries will include that of the assistant to the General Secretary, and I hope that before long it will be further increased by the salary of a Technical Manager. Further assistance will be required by the QSL Bureau and the cost of the BULLETIN will grow with the (presumably) increasing membership.

If the Society is to maintain the excellent financial reserves which have been so carefully built-up over the past few years and not dissipate them in less time than it took to acquire them, then either expenditure must be reduced or revenue increased. If the service to members is to be maintained or improved (as many members think it should) then there is no possibility of pruning the Society's expenditure in any material manner.

We are then left with the only other alternative and that is increasing the revenue. This means all members will have to pay a higher subscription and steps have already been taken to enable this to be done in accordance with law. A further announcement on this matter will be made later.

Balance Sheet.

This may be likened to an instantaneous photograph taken at the close of business on September 30, 1947, showing on the right hand side what cash and property the Society owned and on the left hand side what debts it owed and what surplus remained after taking into account its debts.

It will be noted that the investments held by the Society (which are required by law to be "Trustee" securities) have depreciated in value by £494. That is to say if they had been sold on September 30, 1947, they would have fetched at least £494 less than they cost.

If the cheap money policy adopted by the present Government is changed it is likely that a further considerable loss may be suffered. This matter is being watched anxiously. It is pointed out that about one-third of the investments are held in short-dated securities and that with these no loss should occur.

Prisoners of War Fund.

The Fund has for all practical purposes been distributed and no further reference to it need be made.

The Pilot Officer Norman Keith Adams Prize Trust Fund.

It will be seen that during the year a prize, equal to two years' interest on the Trust Fund has been awarded, no prize having been awarded during the preceding year.

A. J. H. WATSON,
Honorary Treasurer.

R.S.G.B. BULLETIN

OFFICIAL JOURNAL OF THE INCORPORATED RADIO SOCIETY OF GREAT BRITAIN

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CONTENTS for DECEMBER, 1947

VOL. XXIII — No. 6

IT'S COME TO STAY

WE should not anticipate the decisions of a new Council, soon to take office but, in fairness to the many thousands of members who travelled to London to give practical support to the Amateur Radio Exhibition, we feel compelled to voice their hope that this new venture will become an annual event in the life of the Society.

In 1939 when the idea of holding an Amateur Radio Exhibition was first mooted, the Industry as a whole was scarcely aware of the existence of an amateur market. In those far-off days the BULLETIN carried many pages of advertisements boosting American equipment and valves. To offset the effects of the invasion from abroad we attempted to press the merits of British goods. Constructional articles appeared in the BULLETIN and editorials were written in support of the "Buy British" policy. But, in 1939, our numbers were small and the few British components and valves available to the amateur were expensive compared with their American counterparts. However the Council then in office gave its blessing to the proposal and steps were taken to organise an Exhibition in September of that ill-fated year.

The war put an end to everything. The carefully thought out plans were packed away and, if the truth is told, forgotten as the war-clouds darkened the world.

Seven and a half years later the "bright idea" of 1939 was presented to an almost entirely new body of persons comprising the 1947 Council. There were perhaps a few doubtful faces around the Council table that evening when the decision was taken to proceed with the Exhibition. To-day every member of the Council must feel happy in the knowledge that he voted in favour of what seemed at the time to be a very "chancy" project.

Summer was fast drawing to its close before final plans for the Exhibition were completed but during the six months that had passed since the "go ahead" signal was given, three vitally important things had occurred in the world of Amateur Radio. Firstly, a world Telecommunications Conference had taken place—the results of which had placed the whole movement on a higher plane than ever before. Secondly, the Government had rejected all demands for the raising of the ban on the import of radio equipment from America. Thirdly, and of great significance, many sections of the radio industry had awakened to the sound of a voice that kept saying "the Amateur Market *is* worth while"—"the Amateur market *is* worth while."

While this was happening the Society's membership continued to rise steadily each month. Every newcomer to the Society—every newcomer to the Movement—would need valves, and components, and chassis, and receivers and test equipment of all types. Every opportunity was taken to emphasise that these newcomers had no junk boxes. They would require and demand new products.

We had to face up to the fact that a certain amount of surplus Government equipment was passing into the hands of amateurs, and indirectly affecting the sales of new material but the Industry as a whole accepted our argument that this was but a passing phase. How well they responded to our call can only fully be appreciated by the 5,000 odd members who visited the Royal Hotel last month. The effects of that exhibition will soon be reflected throughout that section of the Industry which has set itself out to cater for the needs of the amateur.

Under the fierce glare of publicity and the critical eyes of one third of the membership, the Industry stood up splendidly. Every exhibitor co-operated up to the hilt and many have already intimated that their order books are filled to over-flowing.

From this time forward the Industry will be on its mettle. As each Exhibition approaches (sorry we are again prejudging a decision!) manufacturers will be working on new models which, if our guess is correct, will be unveiled with as many heart throbs as new models are revealed on preview days at Radiolympia and the Motor Show!

Yes, we really believe we have got something in this idea of an Annual Amateur Radio Exhibition. We believe it has come to stay and we believe that before many years have passed it will rank among the leading Exhibitions held in this little old island of ours.

Tnanks for your support.

J. C.

The President, Council and Headquarters' Staff send Christmas and New Year Greetings to Members Everywhere.

TRANS-ATLANTIC AND MIDDLE-EAST—TWO-WAY ON 50 Mc/s.

By D. W. HEIGHTMAN A.M. Brit. I.R.E. (G6DH)

Here is the story of how G6DH—Norman Keith Adams Prize winner, 1947, and winner of the Wortley Talbot Trophy—made history by establishing the first two-way Amateur Radio contacts on 50 Mc/s. from England with the U.S.A. and Egypt.

Retrospect

THIS retrospect story really begins during the last sun-spot maximum (winter of 1936/7), when we endeavoured to make a trans-Atlantic contact on 56 Mc/s. Although there were a few somewhat shaky reports on reception of G's in the U.S.A., we still have to see concrete evidence that, in fact, such signals were copied. G6DH received two reports which checked with times of operation but due to insufficient description of transmission content, tone, etc. they were not accepted. In all such circumstances confirmation by an independent third party is highly desirable.

Anyway we never made that 56 Mc/s. two-way in pre-war days and we hoped, when Hitler decided on war, that he would have had enough of it by the time the next sun-spot maximum was due in 1947/8 ! !—Now we know !

Post War Signs and Portents

In October 1946, conditions above 40 Mc/s. were getting quite interesting and early in November, G6DH established a daily 28 Mc/s. schedule with Ed. Tilton, W1HDQ (*QST* V.H.F. Editor) for the exchange of M.U.F. and general data, with a view to establishing a two way on 50 Mc/s. or higher. Then came November 24 1946, when, after many checks, 100 per cent. solid signals were logged from W1HDQ. The first trans-Atlantic 50/28 Mc/s. cross-band contact took place at 16.20 on that day. This was the real stuff—no doubt about whether you really heard the signal or not ! No other two-way cross-band contact was made during the winter of 1946–47 but on a few days, when there was no activity, the M.U.F. did, in fact, go up to 50 Mc/s., particularly in February 1947.

Then came the summer F_2 " vacation " when E_s (sporadic E) took over on a large scale and a good time was had by all on 58·5 Mc/s.—with contacts up to about 1300 miles recorded.

The Current Season

With the coming of Autumn the M.U.F. was again found to be shooting-up and our schedules with W1HDQ were resumed on October 6. During the first part of the month the M.U.F. was highest in the direction of South Africa and the first 50 Mc/s. contacts between Europe and that country took place. ZS1T was well received at G6DH on October 17 from 1200—1225 G.M.T. his phone peaking to S7. Then came October 25, the first day when there were clear indications that conditions were improving over the trans-Atlantic route. On that day W1HDQ made some 50 Mc/s. transmissions which were not received at G6DH but which *were* received by G5BY whose location has since shown itself to be ideal for 50 Mc/s. work from this country. On the following day G6DH heard W1HDQ at 1347 and by comparison G5BY " went-to-town " with several W cross-band 28/50 Mc/s. contacts. None of the other W's were audible at G6DH and PA0UN. The same applied on the 27th, but on the following day, PA0UN and G6DH had a chance with a better opening and PA0UN made his first contact with W1HDQ at 1245 G.M.T. Many W's were received at G6DH, whilst VE1QZ was logged at 1239. The following days were filled with excitement when several G's made their first cross-band 28/50 Mc/s. W. contacts and one became almost blasè about hearing U.S. phones at S9 on six metres ! November 1 and 2 were not so good and no W's were heard but G5BY heard MD5KW on the 2nd—which brings us to the other side of the picture.

Early in October, that staunch (you never know where he's going to appear next) V.H.F. worker—Major Ken Ellis, ex-G5KW, ex-SU1KE, ex-etc., turned up as MD5KW (Suez Canal Zone) on 28 Mc/s. and gave us the news that he was all set to go on 50 Mc/s. with some worthwhile equipment (including an auto-sender—an invaluable asset for a busy man on a band only needing signals to show that it *is* open !). On October 19 at about 0945 G5BY made the first cross-band 28/50 Mc/s. with

Eileen and Denis Heightman, G6DH, partners at one of the most outstanding amateur stations in the world with the gear that gave them their first 50 Mc/s. contacts with the U.S.A. and Egypt. The top shelf contains a 150 watt 7, 14 and 28 Mc/s. V.F.O. transmitter. Below is the transmitter used for 50 Mc/s. The modulator with two 809's in zero bias Class B is on the third shelf and beneath that is a 25 watt 3.5 Mc/s. transmitter. Power and grid bias supplies are also on the two bottom shelves with an automatic sender. A converted 1154 relay used to change over aerial feeders, etc., is on the wall. The receiver is on the table.

MD5KW and G6LK received 5KW. Unfortunately G6DH was not at home although it is quite possible of course that his location on the S. East coast may have been just within the skip zone and 5KW would not have been heard. This happened on several subsequent occasions.

Meantime, we were almost daily worrying our good friend G6CL—"Couldn't he persuade the G.P.O. to give us, at least, temporary permission to operate on 50 Mc/s. ?" The outlook at first was not too good but we had a most exciting surprise when, by the morning post of November 5, we received a letter from R.S.G.B. H.Q. saying that temporary permission was granted. The transmitter was operating on 50 Mc/s. very shortly afterwards!

Transmitter at G6DH

How did we manage to get going on 50 Mc/s. so quickly ?—When the Atlantic City Conference was sitting, frequencies in the 50 Mc/s. range seemed so uncertain that in planning a new transmitter it was decided to use a wide-range VFO exciter. Fortunately we were able to purchase a piece of surplus equipment known as a Type 37 oscillator (A.M.) which gives a stable output of 10–20 watts (finishing in an 807) anywhere from 20–80 Mc/s. This oscillator had been used on 58·5 Mc/s. for some time and it was only necessary to twist the dials a few degrees to change over to 50 Mc/s. The final stage comprised a pair of *Eimac* 24 G's in push pull, giving an input of 120 watts at a frequency near to 50 Mc/s.

For reception, during the first part of October, a long wire or a 50 Mc/s. dipole (fed at the centre with 85 ohm balanced twin polythene cable) only were available (the latter being used for ZS1T) but it was obvious that a beam would help considerably.

The Beam

Those who still shirk from putting up a beam may derive some enthusiasm from knowing that the three element 50 Mc/s. beam at G6DH was completely made from scratch, put up and tested within 2¼ hours!

We had on hand some ⅜" dural tube elements 8' 6" long cut for 58·5 Mc/s. The first job was to lengthen them slightly for the lower frequency, which was done by binding thick pieces of copper wire on the ends. Theoretical lengths were used and no attempt was made to adjust them. As a matter of interest the reflector measures 116", the dipole 110" and the director 105". The reflector was spaced 0·2 wave (46") and the director 0·1 wave (23"). A piece of wood about 1" × 2", and 6' long was found, and three small slots cut in it with a saw (at the appropriate spacings) and the elements bound in position with stranded wire. The centre of gravity was found by balancing and a short cross member (about 2½') of similar wood was placed at the C.G. across the main member and fixed to it. On to this were fixed two long cords to be used for rotating and holding the beam in position.

Next came connection of the feeder. The feeder is of a type used exclusively at G6DH which for cheapness, high efficiency, negligible weather effects and simplicity cannot be beaten. It consists merely of two 18 SWG. (85 ohm) or 16 SWG. (75 ohm) copper conductors laid side by side in polythene insulation, making a small flat twin transparent cable. The soft drawn variety is to be preferred. This feeder "delta matches" very well into a multi-element beam. The matching in the present case was carried out by sliding the split ends of the feeder in and out until maximum voltage (as indicated by holding a neon tube near the end of the dipole) was obtained on the ends of the dipole. The distance off-centre was not very critical—10" either side of centre, for the 85 ohm cable, proved best.

Being a temporary effort we did not wish to make an elaborate mast so the beam was hoisted up bodily at its C.G. on a spare halyard attached to one of the 50' masts until it was about 38' above the ground.

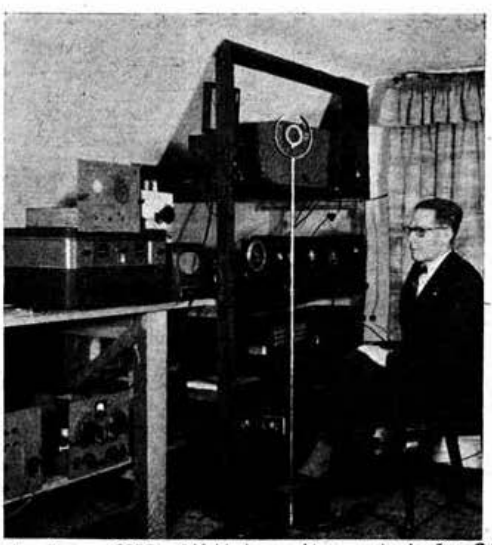
The beam made a great deal of difference to reception and was essential in some instances for receiving signals which were inaudible on the other aerials.

The Receiver

Since a considerable amount of checking is done outside the amateur bands the receiver used is a general coverage type, tuning from 35 to 62 Mc/s. The circuit comprises a 954 mixer with controlled regeneration; 955 oscillator (supressor grid injection); two 3 Mc/s. I.F. stages (6K7's); 6C5 regenerative second detector and 6V6 output. On 50 Mc/s. a pre-set, wide-band single R.F. stage with aerial input matching and a 6AK5 valve is used ahead of the receiver.

The Great Day

It was most fortunate that conditions for U.S.A. remained good. On November 5 W1HDQ was, for once, unable to keep his usual 28 Mc/s. schedule at 1200 G.M.T. so, being late, he came up on 50 Mc/s. immediately. After working G6LK cross-band to 28 Mc/s. he said he would look for G6DH on 28 Mc/s. (not knowing until he worked G6LK about the special 6 metres experimental licences). Accordingly G6DH gave a short call on 28 Mc/s. and asked him to "listen on 50 Mc/s. right away." W1HDQ replied that he was ready and that his receiver was going down to six—W1DHQ's phone on 50 Mc/s. was S9 plus! At 1301 G6DH called him on 50 Mc/s. phone. W1HDQ replied immediately giving an S7 report. The contact was quite solid but was made short in order to give others a chance, breaking off at 1312 G.M.T. At 1345 W2AMJ was called and worked and later W1LLL, W8MVG, W1AF and W1CLS. We believe VE1EA also called but we apparently missed him.

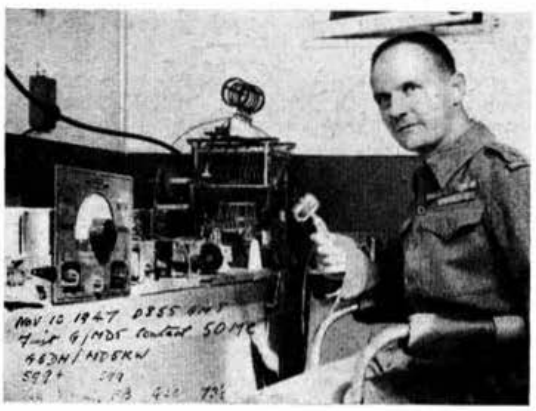


Arthur Simons, G5BD, of Mablethorpe, Lincs, made the first G-VE contact on 50 Mc/s. Transmitter line-up: ECO—6V6 (3·125 Mc/s.), 6L6 (6·25 Mc/s.), 6L6 (12·5 Mc/s.), 6L6 (25 Mc/s.), 807 (50 Mc/s.). Final 35T (90 watts). Receiver: 4-stage convertor feeding into an AR77 used as an I.F. on 2·7 Mc/s. Convertor line-up: 1st R.F., CV53 grounded-grid; 2nd R.F., EF54, Mixer EF50, Oscillator 6C5. The AR77 is the only piece of equipment which is not home-made. Aerial is a simple half-wave dipole suspended vertically from a 60 ft. high Zepp. G5BD, like many other prominent 6metre G's, has been active for 20 years.

The band remained alive to the U.S. until about 1645 having been open continuously for approximately four hours. The following day November 6, was not so good. Conditions on the 7th were better but G6DH was away from home that day. From November 8 ionosphere storm conditions prevailed with high M.U.F.'s to southerly directions but very poor to E.N.E. and W.N.W. (N. America.)

First Middle East Contacts

Soon after 0800 on the 10th after observing that the M.U.F. was shooting "way up" in a S.E. direction (i.e. Middle East) we began to call MD5KW frantically on 28 and 50 Mc/s. As it happened Ken Ellis was busy at work that morning and did not hear our first calls, but upon checking the M.U.F. and finding it so high he rushed to his station and put his automatic sender on 50 Mc/s. This was at 0850 just when we were begining to give up hope of any Middle East activity! Incidentally there were



Major Ken Ellis, operating from the Suez Canal Zone under the call MD5KW, made the first contact between Egypt and England on 50 Mc/s. when he worked G6DH on November 10, 1947.

plenty of signals of various kinds audible indicating a M.U.F. around 53 Mc/s. MD5KW was heard at S9 plus, immediately he began to transmit. He announced that he was listening on 28 Mc/s. for replies, so again we had to put the 28 Mc/s. V.F.O. to the L.F. end and frantically call him asking him to listen on 50 Mc/s. Fortunately, he came back right away, so we changed back to 50 Mc/s. and gave a very short C.W. call with BK. Back he came again—we'd made it! On changing to phone MD5KW reported reception as "fantastic"—20 db over S9! Although he was having modulation trouble his own phone was received quite well, at a low modulation level, at S7. After the usual exchanges and "congrats" we broke off to give others a chance. At 0913 we heard MD5KW work G6LK and afterwards G5WP.

The subsequent happenings on 50 Mc/s. have been too numerous to summarise here but the tremendous thrills of these initial contacts will long be remembered, especially in view of the long hours of observation, testing, etc. before the M.U.F. went high enough to permit them to take place. In this respect, acknowledgment and thanks are due to the XYL at G6DH (known to nearly everyone as Eileen!) who "held the fort" while the "old man" was otherwise engaged, checking M.U.F. etc. and adding useful information to our records—in addition to providing meals etc. at very odd times—according to conditions!

COMING NEXT MONTH

The first of a new series of articles dealing with Two Metre Operation.

The 50—54 Mc/s. Band

As there appears to be some misunderstanding regarding permission to use this band, members may like to know of the efforts made by the Society in this connection. Towards the end of last year the Society endeavoured to obtain permission for all British Isles amateurs to use the 50–54 Mc/s. band for a limited period, but the G.P.O. could not see their way clear to agree. Further efforts were made in October this year, when the G.P.O. were agreeable to issuing only a limited number of licenses. It was stressed to the G.P.O. that some amateurs in other European countries had recently been given permission to use the band, and that it would be a blow to our prestige if the amateurs of Great Britain were not given an opportunity of making long distance contacts for the first time on these frequencies.

It will be remembered that the Society has frequently asked members to communicate with Mr. W. A. Scarr, G2WS, in order that the Society can assess the interst in these frequencies. Speed was necessary in dealing with the matter as the MUF conditions for long distance communication could have been reached and passed within a day or two of the authority being given. Had the Society written to the Regional and County representatives for names to be submitted, several days would inevitably have been lost. It was therefore decided that the best thing to do in the circumstances was to write personally to those who it was thought could get on the band quickly, the names being selected from information supplied by Mr. Scarr. It seems desirable to point out that those who have complained to Headquarters had failed to furnish Mr. Scarr with recent reports of their activities.

A.E.W.

AROUND THE STANDS—*Contd. from p. 115.*

Publications

While the hand of "austerity" seemed to rest lightly on the Exhibition as a whole, the icy fingers of paper shortage and printing difficulties could be detected on the stands of those publishers to whom the amateur looks for data and guidance. But despite restricted circulations and limited editions, brave efforts were made by the representatives of the leading technical press to make available the information so sought after by the amateur. Sales of the Society's "Micro-wave Technique"—straight from the printing press—proved how keen is this demand.

NEW MICROWAVE RECORD

QST reports a contact on October 5, 1947, between W6IFE/6 and W6ET/6 over a distance of 150 miles on 3,300 Mc/s. This distance is three times greater than the previous known amateur Microwave record. How about some news of activity on the British band of 2,300–2,450 Mc/s.

Trans-Jordan

As a number of recent claims for B.E.R.T.A. and W.B.E. certificates have included cards from Trans-Jordan the Society has approached the Colonial Office for a ruling as to the status of this country. The Colonial Office states: "Trans-Jordan became an independent Kingdom in 1945."

In view of this fact contacts with stations in that country cannot be accepted for R.S.G.B. certificates.

A TEN-TWENTY ROTARY BEAM

By GERALD A. JEAPES (G2XV)*

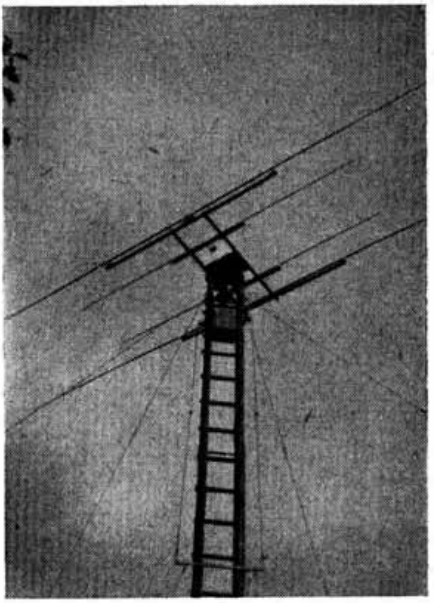
THE problem at G2XV has always been to know how to devise a 14 Mc/s. and 28 Mc/s. aerial system which will radiate to the west in a garden only 28ft. wide running east and west. A fixed 33ft. aerial cannot be suspended from the ends, because it is not possible to erect poles sufficiently far apart in the right places. It was decided, however, that a risk of "local" QRM could be taken by allowing the tips of the elements of a rotary beam to overhang neighbouring gardens. The overhang in any case would only take place when the beam was in a certain position, and would normally be swung into such a position that it ran lengthwise over the writer's garden.

Supports

Considerable thought was given to the question of support, bearing in mind that materials are limited. It was finally decided to bolt two poles together with spacers between them and then to bolt-on a set of rungs all the way up thus simplifying the task of reaching the aerial for erection and adjustment purposes. The accompanying photograph shows how this was done.

Construction of Beam Head

As no commercially-made rotating beam-heads were available in this country at the time the aerial was erected, the next problem was to provide a bearing to support the beam, as well as an electrically driven reduction gear to drive it. The rear axle and its associated housing, obtained from a scrap motor car, were pressed into service for the bearing, after which the gearing and motor housing were tackled. This presented quite a problem since the whole unit had to be made weatherproof, because of the electric motor. Since the speed of the motor was 1,400 r.p.m., something had to be done to obtain a reduction drive to the car axle in order to bring down the speed of rotation of the beam to some reasonable figure. This was achieved by constructing a sheet steel box (the ends of which could be screwed on with self-tapping screws), with a sheet cork gasket between the faces of the lids and the box body, thus making a weatherproof joint. Into this box was assembled the electric motor which carried a small "V" pulley on its shaft. Above the motor was fitted a hand-geared bench grinder of the type used for tool sharpening but with a "V" pulley in place of the grinding wheel. This pulley was coupled to the motor with a light "V" rubber and canvas belt as used for driving refrigerators. On the shaft, which originally carried the handle on the grinder, a small cycle chain cog was fitted which in turn drove on to a larger cog on an old cycle hub mounted to the side of the grinder. To the other end of the hub was fitted a further small chain wheel which drove a larger chain wheel mounted on to a shaft. The shaft passes out of the side of the box through a watertight bushing which has grease-soaked felt washers on either side to prevent water or damp from entering. On the end of the shaft is fitted a further small chain cog which drives, by means of a chain, the axle bearing mounted above it on the pole. All this, together with the 5–1 reduction in the crown-wheel gearing in the axle itself, effected the needed reduction and gave the actual aerial a speed of rotation of just under one revolution per minute. The arrangement also holds the beam locked solid in position irrespective of wind pressure.



The G2XV Rotary Beam showing method of construction.

Aerial Design

Credit for the design of the actual aerial, with its attendant feeder system, must go to W2IJD, who spent much time on the air passing over all the dimensions and details of his own dual "ten and twenty" two-element close-spaced array. The

* 89 Perne Road, Cambridge.

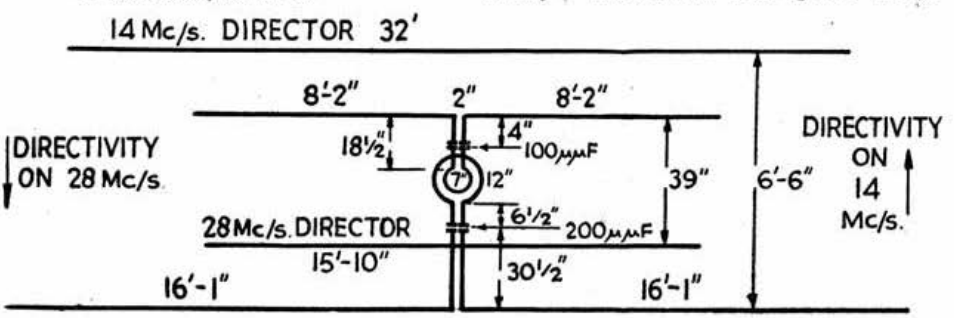


Fig. 1.
Dimensions of the ten-twenty metre beam used at G2XV. All rings and stubs except the actual elements are constructed from ¼ in. copper tubing. Measurements are from centre to centre.

design has proved most successful, and can be highly recommended for confined spaces since the distance between the outer elements is only of the order of 6ft. 6in., thus presenting a very compact job.

The elements were constructed from light gauge weldless steel tubing in sections of 1in., ¾in., ½in., and ⅜in., which were first copper plated and then socketed together in fishing rod fashion and brazed-up like a cycle frame, after which two coats of high-quality motor body enamel were applied to give as much protection from the weather as possible.

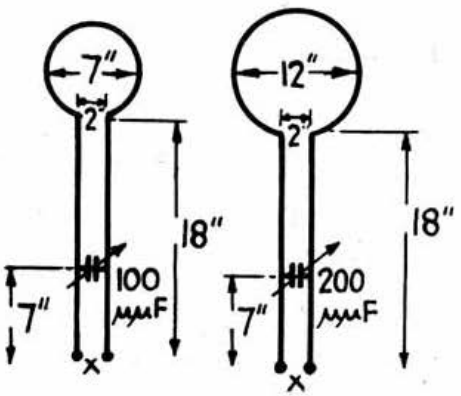


Fig. 2.

Details of fixed rings and stubs. The feeders connect at points marked "X." Any type of open-wire feeder may be used but 2 in. spaced No. 12 S.W.G. is recommended. The series condensers should be as nearly as possible matched for capacity, weatherproofed and of high quality mica with a D.C. voltage rating of 2,000–3,000 volts at least.

The radiators are fed with stubs coupled to rotating inductor rings, an arrangement which permits of continuous rotation of the beam without the usual trouble caused by twisting feeder lines. The inductor rings are coupled to fixed rings mounted under the rotating rings, and are fed with a tuned stub connected to the 2in. spaced feeder line which runs to the transmitter. Separate feeders are used for the ten and twenty metre aerials.

Since the aerial system is of the close-spaced type it is necessarily quite selective as to frequency. It is, therefore, essential that due consideration be given to which part of a band is to be used for normal operation. This point established, the correct dimensions must be ascertained.

In actual practice it has been found that no undue falling-off in efficiency is apparent until the transmitter is tuned at least 30 kc/s. either higher or lower in frequency, than the mid point. Detuning beyond these limits definitely effects the loading and impairs the efficiency of the system.

The dimensions given in Fig. 1 are based on an approximate operating frequency of 14350 kc/s. for the 14 Mc/s. section, and 28200 kc/s. for the 28 Mc/s. section.

Tuning

Provided the construction is carried out in accordance with the details given above, tuning is remarkably simple. The method is as follows:

Couple the 28 Mc/s. feeder quite loosely to the transmitter tank coil by means of a two-turn link. Switch on the transmitter and tune the anode circuit for minimum "dip" in the usual way. Then proceed to the top of the pole armed with a 4-volt flashlight bulb to which has been soldered a pair of "eroc" clips with about 3in. of wire between them. Clip the bulb across about 2in. of the fixed inductor ring on the side remote from the stub and tune the stub condenser for maximum bulb brilliancy. Repeat this process with the 14 Mc/s. section and the job is done.

The tuning condensers are of the ordinary receiving microdenser type, and are mounted inside small wooden boxes, just sufficiently large to take them, with the connections brought out through ceramic lead-in insulators. A screwdriver slot is cut in the ends of the condenser shafts to enable them to be tuned through a hole in the side of the box with an insulated trimmer tool. A cork can be inserted later to keep out the weather. Before mounting the condensers it is advisable to give the boxes, both inside and out, a good coat of waterproofing. This can be made by dissolving a little pitch off the top of an old H.T. battery in a small quantity of carbon tetrachloride or petrol.

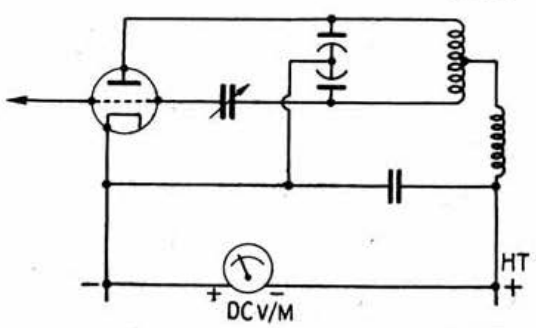
The directivity of the beam is excellent, whilst the gain would appear to be rather better than 6db, to which must be added first the considerable advantage of the lowering of the angle of radiation, and second the reduction in losses of the feeder system as compared with the more commonly-used 72 ohm line. As a receiving system it leaves very little to be desired.

Neutralisation

It often happens that when using an ordinary variable condenser in a single-ended amplifier perfect neutralisation is difficult to obtain, and, indeed, sometimes impossible, owing to wiring, stray capacities, etc.

As it is very much easier to split the capacity than it is to find the exact electrical centre of the coil, this difficulty is usually got over by the use of a split stator condenser. However, it may be that one's pocket is not always sufficiently lined at the right moment to allow of new components being obtained, consequently an endeavour must be made to obtain a point as near to perfect neutralisation as possible. In attempting this it may be useful to recall an old hint that after the usual preliminary adjustment the most sensitive method of final adjustment is to measure the rectified R.F. in the valve by means of a D.C. voltmeter, and to reduce any value shown to zero or minimum reading by adjusting the neutralising condenser one way or the other. This is a much more sensitive method than using either the plate milliammeter in the driver or the grid meter in the final. The D.C. voltmeter must be connected contrary to normal practice, that is, the positive terminal must be connected to the cathode and the negative terminal to the H.T. line (the H. T. voltage must, of course, be cut-off during the operation). Any movement of the neutralising condenser will be reflected in the meter reading.

G2AT.



Method for achieving neutralisation by measuring rectified R.F. in the P.A. valve.

MODIFYING THE CLASS D WAVEMETER FOR THE AMATEUR

By K. E. V. WILLIS, A.R.C.S., B.Sc. (G8VR)*

THE Ministry of Supply Wavemeter Class D Mark II—to give its full description—is now available to the public through the usual surplus dealers. It is not generally realised that this beautiful little instrument, developed for use in the field during the war, can be readily adapted for the amateur station and thereby provide a low-cost meter conforming with G.P.O. requirements for frequency measurement. This article describes certain minor modifications carried out by the writer in adapting the instrument, the result being a frequency meter of high accuracy at a cost of less than £4.

The instrument was originally intended for 6 volt D.C. operation, incorporating a vibrator power supply unit which furnished about 100 volts on load, metal rectifiers being employed. The 6 volts D.C. energises both the filament of the type ARTH2 valve and the pilot lamp directly. It is not necessary, however, to purchase the vibrator if A.C. operation is desired, consequently if the spares (usually sold with the meter) are also omitted, a great saving in cost results. The meter is normally used by the amateur in conjunction with a communications type receiver having 6 volt A.C. filament valves. If this is the case, the modification becomes very simple, for the supply to the wavemeter can be taken from the receiver. In any case, there is room inside the instrument, after removing certain unnecessary components, to fit a small 6 volt transformer, when the supply can be taken directly from the A.C. mains.

Fig. 1 shows the arrangement of the power supply circuits. Should any reader possess an instruction book for the instrument, it must be noted that the numbering of components in the figure does not conform with that given in the official circuit diagram, and is introduced simply for clarity. The components marked can readily be identified underneath the chassis, since the wiring is sufficiently open to permit of detailed inspection. The input can be traced through the front panel to the on/off switch, then through a "hash" filter consisting of a condenser (C1) and a choke (L1), finally going to pin 7 on the valve base and to the centre of the 6–0–6 volts transformer primary.

Fig. 2 shows the modification for 6 volt A.C. operation. It will be noted that the filter and vibrator socket have been removed and the resistors across the transformer primary sections disconnected. The secondary side with its associated rectifiers is not touched, nor are the input switching and pilot lamp connections.

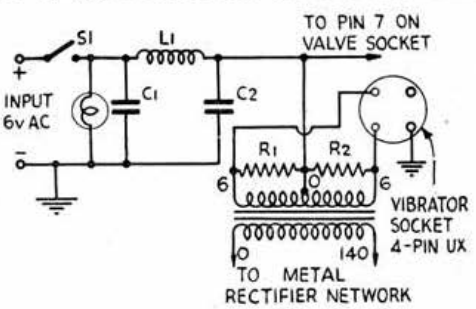


Fig. 1.
Power Supply circuit before modification.

C1 0.1 μF ±20% 350 V.d.c.
C2 50 μF 12 V. Electrolytic.
S1 On/Off switch.
L1 Approx. 40-turns enamelled wire close-wound on ½" paxolin former.

The 6 volt A.C. input is switched to one half of the transformer primary (which is clearly marked so that there can be no possibility of error), the outside of the winding being connected to earth to complete the input circuit. The "before and after" figures show what is necessary to be done without a detailed explanation.

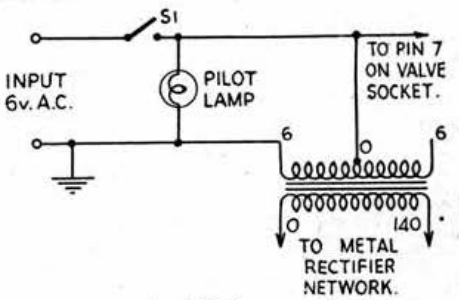


Fig. 2.
Modified Power Supply circuit.

Finally, two points which occurred during the experimental work on this instrument at the writer's station are passed on for the benefit of other amateurs. Firstly, although the meter nominally operates over the range 1·9 to 8·0 Mc/s, it will be found that it may be used with complete satisfaction on the 14 Mc/s. band (actually up to 18 Mc/s.) and with rather reduced signal strength on the 28 Mc/s. band. In general, on the 28 Mc/s. band it is useful only as a marker for 1,000 kc/s. and 100 kc/s. points, the interpolation oscillator being too weak for serious work. However, since most V.F.O. units start out on a low frequency, this is no objection. Secondly, if a type 6K8G valve is substituted for the recommended ARTH2, the two crystal oscillators will operate satisfactorily, but the interpolation oscillator will usually refuse to start owing to lack of feedback.

Fitted with a suitable distorting amplifier to improve the harmonic output, the meter should give useful output on the 58 Mc/s. band, but, even as it stands, it is an excellent investment.

* Pine Lodge, Westergate Road, S.E.2.

OUR FRONT COVER

THIS month's picture, which is reproduced by courtesy of Messrs. Radiocraft Ltd., of Upper Norwood, S.E.19, shows a Model 7 AvoMeter being used on a small Transmitter to check the anode voltage of the first valve, a 6L6, which was being adjusted to run at 325 volts. The H.T. anode and screen feed to the transmitter are supplied by the bleeder resistor. The Model 7 AvoMeter is a multi-range A.C./D.C. instrument which is particularly suitable for radio testing by virtue of its comprehensive range of readings and small power consumption. Fully descriptive pamphlet available on application to The Automatic Coil Winder & Electrical Equipment Co., Ltd., Winder House, Douglas Street, London, S.W.1.

THE AMATEUR RADIO EXHIBITION

AN OUTSTANDING SUCCESS — LARGE CROWDS

WITHOUT question the first Amateur Radio Exhibition organised by the Society and held at the Royal Hotel, Woburn Place, London, W.C.1, from November 19th to November 22nd, 1947, was an outstanding success. The measure of that success can be assessed by the many appreciative letters received at Headquarters both from members who attended and manufacturers who supported the Exhibition.

That it fulfilled its purpose none who visited the Exhibition will deny for it provided the radio industry with a unique opportunity for displaying its productions to a keenly critical and well informed audience under ideal conditions—if we exclude the abnormally high temperatures which characterised the middle week of last month!

Bearing in mind that plans for holding the Exhibition were approved many months before the date of the Royal Wedding was announced—an event which, incidentally strained fully the resources of the hotel industry—it speaks well for the management of the Royal that they were able to provide an almost perfect service throughout the period of the Exhibition. To Mr. W. Mills (Manager of the Royal Hotel) the organisers owe a debt of gratitude for his co-operation and enthusiastic support. Both from the point of view of the Society and the hotel management the occasion was unique. We shall not be surprised if we learn later that the Society's enterprising venture has been copied by other organisations, for the suitability of the Royal Hotel as a venue for small-scale technical exhibitions cannot be questioned.

OPENING CEREMONY.

Col. Sir Stanley Angwin, K.B.E., D.S.O., T.D., with the President, General Secretary and Mr. Arthur Watts (Past President). Mr. H. Freeman (Exhibition Manager) is to the right.

Opening Ceremony

Any latent fears the organisers might have had that their venture would not succeed were quickly dispelled when a packed assembly gathered just before 2.30 p.m. on Wednesday, November 19th, to witness the opening ceremony by Col. Sir Stanley Angwin, K.B.E., D.S.O., T.D. (Chairman, Cable & Wireless, Ltd., and until last year Engineer-in-Chief, G.P.O.).

The President (Mr. S. K. Lewer, B.Sc., G6LJ) in welcoming Sir Stanley, spoke of his outstanding work as Chairman of the U.K. Delegation at the Atlantic City Conference. He had no doubt been impressed with the many fine speeches made on behalf of amateurs by Empire and foreign delegates at the Conference, speeches which he felt sure must have deepened Sir Stanley's appreciation of Amateur Radio. He had seen the movement grow from a small beginning—mostly by his close contact with the licencing position—but also by his observations during his travels abroad to various conferences. He had also witnessed its growth in quality and magnitude, enhanced by the substantial increase in our maximum power limit to which the industry has made an excellent response.

Sir Stanley Angwin began his speech by referring to the wisdom of the Council in arranging to send representatives to the recent Atlantic City Conference. He hesitated to think what would have happened at that and preceding conferences if the Amateur Radio movement had not been fully represented. He congratulated the Society on its choice of officers and executive, and spoke of the helpful manner in which the Council's representatives had co-operated with the U.K. Delegation at the recent Conference. The Society had always put forward reasonable claims and although it had not always been possible to provide all the facilities requested, those responsible for the granting of licences fully appreciated the value of the radio amateur. The Society had always encouraged technical development and in so doing it had had a direct influence on improving operating standards. The principle of voluntary control as opposed to irksome restrictions had always worked well in Great Britain.

Sir Stanley paid a warm tribute to the part played by the Society during the war in providing up-to-date technical information, and to the magnificent contribution to the war effort made by its members. The progress of the Society was reflected in the five-fold increase in membership which had taken place since 1939. He expressed the hope that amateurs the world over would take full advantage of the facilities provided by the Atlantic City Convention to investigate the very high frequencies. Although he did not anticipate that many of the concerns showing at the Exhibition were yet in a position to provide equipment for microwave work, he visualised a marked change in the position within a few months. Even as earlier generations of youthful experimenters had probed into the unknown, so would modern youth rise again and set a lead in the development of microwave technique.

Sir Stanley congratulated the Society upon its enterprise in organising the Exhibition, the first of its type ever held in Great Britain. He predicted that the exhibitors would find themselves called upon to deal with quite a different type of audience than at Radiolympia. The Exhibition would, he suggested, greatly benefit manufacturers as it would enable them to calculate the needs of the radio

amateurs. The amateur, too, would benefit as it would enable him to present his problems to men who know what is required.

Sir Stanley appreciated that a very large percentage of the membership was anxious to operate transmitting equipment, on the other hand he felt that there was an increasing need for Listener Research. Numerous problems related to the ionosphere still remained unsolved and the keen amateur was without question a most suitable person to assist in the solution of such problems. Sir Stanley then formally declared the Exhibition opened and wished it every success.

Mr. Arthur E. Watts, G6UN (Past President), in moving a vote of thanks referred to Sir Stanley's able chairmanship of the all-important Frequency Allocations Committees at the Atlantic City, Cairo and Madrid Conferences. He was grateful to Sir Stanley

INSPECTING THE STANDS.
Col. Sir Stanley Angwin with Mr. Spencer, G4HV, (left) Managing Director of Odeon Radio.

for emphasising the value of Listener Research, particularly as the Society was taking steps to focus attention on this important aspect.

Sir Stanley's long association with the G.P.O. had enabled him to estimate and appreciate the worth of the radio amateur. He had stated that the Society had always presented a reasonable case when applying for extended licence facilities. It was perhaps this attitude, Mr. Watts suggested, that had enabled the Society to achieve recent successes, whereas many of the other twenty odd European national societies had failed to obtain the full support of their respective licencing authority.

The vote of thanks was carried with acclamation after which Sir Stanley, accompanied by the President, the President-Elect (Mr. V. M. Desmond, G5VM) and the General Secretary (Mr. John Clarricoats, G6CL) inspected the exhibits. During the tour Sir Stanley singled out Mr. Denis Heightman, G6DH (Managing Director of *Denco Radio*, Clacton) and warmly congratulated him upon his recent achievement in establishing the first two-way trans-Atlantic contact on 6 metres.

At the conclusion of his inspection of the stands Sir Stanley expressed his pleasure at seeing such a wide variety of up-to-date equipment on display.

Attendance

It is estimated that well over 5,000 members and interested non-members visited the Exhibition, with an attendance on the closing day of nearly 3,000. The support given by provincial members was especially gratifying, many of whom travelled great distances to attend.

The R.S.G.B. Stand

A feature of the Society's stand was an exhibition of equipment loaned by members of the Technical Committee. Many hundreds of members signed the visitors' book and left QSL cards. The R.S.G.B. stand became a focal point for informal discussions —technical and social— and it is no exaggeration to say that never before in the long history of the Society have so many members been present together at a function as was the case on the Saturday. It was as though Convention and a dozen O.R.M.'s had been rolled into one!

The Luncheon

Prior to the opening ceremony a complimentary luncheon was given by the President and Council to a number of well known personalities within and without the Radio Industry.

At this pleasant and very informal gathering the President was supported by every member of the Council except Dr. Bloomfield, G2NR (who was prevented by illness from attending), by every living Past President (except Dr. Eccles) and by every Honorary Member, including Mr. Leslie McMichael and Dr. R. L. Smith Rose. Among the distinguished guests were Mr. Rene Klein (Founder Member), Mr. A. J. Gill (Engineer-in-Chief, G.P.O.), Mr. A. H. Mumford, O.B.E. (Radio Branch, G.P.O.), Col. Eric Cole, C.B.E. (Chairman, B.J.C.B.), Com. K. B. Best (Home Office Radio), Mr. A. F. Bulgin (Chairman, R.C.M.F.), Mr. C. E. Strong (Chairman, Radio Section, I.E.E.), Capt. H. A. de Donisthorpe (Chairman, Radio Industry Club), Mr. Hugh Pocock and Capt. S. R. Mullard. The Past Presidents in attendance were Col. Sir Ian Fraser, M.P. (1928), Gerald Marcuse (1929–30), H. Bevan Swift (1931–33), Arthur E. Watts (1934–36, 1938–40), E. Dawson Ostermayer (1937), Alfred D. Gay (1941–43) and Ernest L. Gardiner, (1944–46).

At the complimentary luncheon preceding the opening of the Exhibition. Col. Sir Stanley Angwin, at the head of the table with the President (Mr. S. K. Lewer), Mr. Leslie McMichael and Col. Sir Ian Fraser, M.P. In the foreground Mr. A. H. Mumford opposite Mr. Gerald Marcuse, Col. E. S. Cole, Mr. H. Bevan Swift and Capt. H. A. de Donisthorpe.

Following the Loyal Toast and a toast to H.R.H. the Princess Elizabeth and Lt. Philip Mountbatten, the President proposed a toast to the Radio Industry. Mr. Lewer emphasised how much the amateur is dependent upon the manufacturer and how well the manufacturer is responding. He warmly welcomed the representatives of the Industry and assured them that the Society is at all times anxious to co-operate with manufacturers, in indicating the types of equipment which amateurs will need. He extended a similarly warm welcome to representatives of the G.P.O. and other Government Departments, and to the two Founder Members of the Society present.

The President spoke of the growth of the Society and of the current difficulties attendant upon paper rationing. He regretted that it had not been possible on the present occasion to provide space for all the firms who would like to exhibit. He concluded by thanking the Press for their support and co-operation at a time when they are so badly starved of the raw materials of their trade.

Capt. S. R. Mullard, one-time member of the Council, in reply referred to the very large number of early members of the Society who had helped to found the Radio Industry. Although a spirit of goodwill had always existed between the amateurs and those who made the " bits and pieces " it was not until recent years that the industry had fully appreciated the importance of the amateur market. Capt. Mullard spoke of the pioneer efforts of Round, Eckersley, Goyder and Marcuse, all of whom had made great contributions as amateurs to the development of radio communication. He was glad to notice that the Society appreciated the importance of encouraging the younger generation of amateurs. Vast new fields remain to be explored. He was glad to find that many well known companies were exhibiting and was happy to be in the company of many of the leaders in the industry. He wished the Society every success and foreshadowed that the Exhibition would become an annual event.

Exhibition Manager

The Society records its appreciations to the Exhibition Manager (Mr. H. Freeman, of *Parrs' Advertising* Ltd.). Mr. Freeman's experience of Exhibitions dates back to the first Radio Exhibition staged in the Central Hall, Westminster, well over 20 years ago. On this occasion although suffering from a severe attack of sciatica, he excelled himself by his close attention to detail and his unfailing courtesy. He was assisted throughout the week by Mrs. Freeman.

Stand Duty

Warm appreciations are also recorded to all who undertook duty on the Society's stand. Headed by G./Capt. H. W. Evens, G6CH, Mr. C. T. Wakeman, G4FN, Mr. Frank Forbes, ex 2BFC, Mr. E. S. Fish, G2HCZ, Mr. P. C. Bond, G3BEG, and Mr. Delvin, G2FLK, the voluntary workers carried out an onerous task with great enthusiasm thereby earning the grateful thanks of the Council and the Secretariat.

Exhibition Photographs

Copies of all photographs reproduced herein can be obtained from Mr. F. G. S. Wise, 5 Victoria Street, London S.W.1. Price 5/- for 8" × 6" size and 3/- for 6" × 4" size.

AROUND THE STANDS

A BRIEF SURVEY OF NEW DESIGNS

OUTSTANDING feature of the Exhibition was the clear indication of the desire of manufacturers to cooperate fully with the amateur in producing equipment which is really suitable for amateur transmission and reception. The completeness of the range of components and equipment was staggering to those who recalled the pre-war period. Significant also, were the many examples of the rapid adoption of the latest trends in design and operating technique which showed a willingness to break away from the orthodox equipment established during the later stages of the war. Unlike many similar industries, the progress in communication design made during the past two years is on a par with the advances made during similar periods of the war—a tribute to the influence of amateur activity.

The presence, on the stands, of so many well-known amateurs occupying important positions in the Industry showed how keen was the desire to take full advantage of the interchange of ideas and views between manufacturers and amateur.

Midget Transmitter

How valuable such contact can prove was well illustrated by the case of " The Flat-Dweller's Transmitter " displayed by *Odeon Radio*. Intended in the nature of a humorous comparison with their six-foot 150 watt relay rack amateur band transmitter (RT150), the midget 3 stage 15 watt set—using double-triode 6N7 valves and a built-in power supply—attracted so many enquiries that a decision was taken to go into production with an even smaller transmitter.

Band-Pass Filter

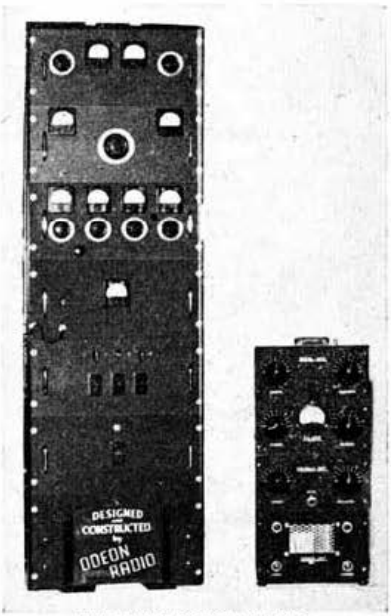
Similarly, *Labgear Ltd.* are now considering marketing an aerial matching coil with banana sockets soldered direct to the coil itself thus allowing rapid selection of correct impedances. This feature is already incorporated in their 150 watt transmitter which possesses many other innovations including their latest bandpass tuner units with square response characteristics. These filters—soon to be available separately—will greatly simplify band-switched transmitter construction as well as helping to minimise harmonic

THE SOCIETY'S STAND.
Mr. Freeman, Exhibition Manager, next to the General Secretary at the right of the group. Mr. Hawker, G3VA, Miss Gadsden, and Mr. Arthur Simons, G5BD, at the left.

radiation. Each unit is arranged to cover an entire amateur band with a variation of not more than 1db response—so making the design of " one-knob " transmitters a comparatively simple proposition involving ganging of only the VFO and PA tank condensers.

New Valves

The QVO range of valves in the *Mullard* list have many uses in the medium power transmitters. The extremely steep slope of the receiving EF42–RF pentode, attracted much comment. *E.M.I.* transmitter valves on show included many established favourites. This firm is encouraging the growth of Amateur Radio by instituting special correspondence courses covering the syllabus of the Radio Amateurs' examination.



THE NEW ODEON RADIO
150 Watt Transmitter alongside the midget flat-dwellers' 15 watt set

Keys—Old Style and New

At last a " bug key " is included in the production lists of a major British manufacturer. The new stream-lined *Eddystone* key, exhibited under working conditions, became the centre of much lively discussion. Smooth in action, with a full quota of adjustable gaps and tensions, the models shown proved very satisfactory at speeds between 12 and 25 wpm. The stocky knob is in contrast to the normal American " flat-paddle " type, and will find many supporters. Perhaps the best feature is the shield which not only protects the user but is heavy enough to prevent the key slipping on the operating table.

A prototype electronic bug—which makes automatic dashes as well as dots—shown by *Odeon Radio* was a foretaste of further developments for the British CW operator. Amateurs who have been at the " receiving end " of electronically keyed signals will be aware that in the hands of a skilled operator this type of key is capable of providing almost perfect " tape " Morse—though plenty of practice is required before they should be used " on the air."

Taming the Tetrodes

The R.A.M. transmitters shown by *Radiocraft, Ltd.* appear to meet the requirements of the newly-licensed amateur who wishes to make a start with a minimum of expense and yet, at the same time, obtaining equipment capable of forming the basis of a future high power set. Those who have had difficulty with the instability of beam tetrodes were particularly interested in the special inductive coupling used in the R.A.M. " Tom Thumb " and " Type 26 " transmitters which, it is claimed, eliminates parasitic oscillation and minimises harmonic radiation. A good example of the effective manner in which this concern will construct apparatus to individual specification was seen in a Push Pull Amplifier with a pair of 813's—which, fortunately, is to be exported to ZL !

Components

The rugged construction and comprehensive nature of the range of *Woden* " de-luxe " transformers came in for much favourable comment, and were typical of the high quality of component material, design and workmanship displayed by the firms catering for the amateur who prefers to construct his own equipment. The *Denco, Labgear, Belling and Lee, Eddystone* and *Radiomart* stands provided convincing proof that the " commercial " market is not being developed at the expense of the home constructor. *Southern Radio* (of Salisbury) offered evidence of the wide variety of equipment and parts now stocked by leading provincial distributors.

R.S.G.B. Stand

The display staged by the Technical Committee of the Society indicated the wide field of experimentation open to the construction-minded amateur. From the valve voltmeter with diode probe shown by G2IG to the reactance modulator for narrow-band F.M. produced by G5CD, the exhibit was planned to cover many interests. A 25 watt transmitter built by G6LL employs a regenerative crystal oscillator that can be keyed without chirp and provides harmonic output with moderate crystal current. The " heavy stuff " included a 150 watt 6J5–807–808 transmitter and a frequency standard-cum-signal generator shown by G2MI. An amateur band receiver built by G8PD and the " Vade Mecum " 60 Mc/s. receiver described by G2WS in a recent issue of this Journal were also available for inspection.

How closely home construction and commercial apparatus may be blended was strikingly demonstrated by the use the *Labgear* representatives made of G2IG's " Rotary Beam Direction Indicator "—(employing *Muirhead* Magslips)—while explaining methods of setting up the induction motor which their firm has developed for rotary aerials.

Meters

An amateur without reliable meters is like a car without a steering wheel; *Taylor Electrical Instruments, Ltd.*, and *Measuring Instruments (Pullins), Ltd.*, provide no excuse for such a state of affairs. One point raised by M.I.P. was the need for standardisation of S-meter calibration. They are prepared to provide scales to meet individual requirements but would welcome the universal acceptance of a given S points/db steps ratio. The uses to which the Model 20A circuit tester can be put for tracing receiver faults was made clear on the *Taylor* stand.

Less spectacular, but equally important was the specialised aerial equipment shown by The *Telegraph Construction and Maintenance Co.* and *Antiference, Ltd.* An inductively-loaded shortened television dipole gave rise to discussion as to the possibilities of adapting 28 Mc/s. aerials for use on 21 Mc/s. when that band is opened.

(*Continued on page* 108)

ANNUAL REPORT

THE Council has pleasure in presenting a Report covering the chief activities of the Society during the year which ended on September 30, 1947.

Membership

As was to be expected the spectacular increase in membership recorded in the last two Reports has eased. The increase recorded during the year under review more nearly approximates to normal growth for a Society with a hobby interest.

The following table shows the strength of the membership at the stated date over the past four years :—

Class.	1943–4	1944–5	1945–6	1946–7
Corporate—				
Home	7,191	8,876	11,446	12,105
Overseas	359	330	380	546
Associates and Juniors ..	167	396	675	1,132
Life Members	22	38	62	79
Honorary Members ..	5	6	7	8
TOTALS	7,744	9,646	12,570	13,870
NETT INCREASES ..	—	1,902	2,924	1,300

In presenting these figures the Council considers it desirable to record that during the year no less than 2,997 new members joined the Society. The difference between this figure and the nett increase figure indicates that 1,697 persons who were members on September 30, 1946, allowed their membership to lapse during the year.

There is little doubt that a large number of young persons joined the Society during the war years when the subscription for Service members was 10/– and that upon their return to civilian life their interest lapsed for various reasons.

The Council wishes to draw attention to the large increase which has occurred in the Associate and Junior Associate class. This would seem to indicate that many Corporate Members who act as sponsors recognise the desirability of recommending applicants first to join as Associates, in order to become conversant with Society affairs, before applying for Corporate Membership.

Representation

A new Regional scheme of representation was introduced as from January 1, 1947. The scheme has proved generally satisfactory and only minor modifications became necessary as experience was gained.

The Council desires to record its warm thanks and appreciation to the Regional Representatives for their co-operation and guidance during the year. Thanks are also recorded to all County and Town Representatives. The former, as the result of the Ministry of Supply Surplus Transmitters schemes, found themselves called upon to undertake duties which were not visualised when they took office. The fact that the schemes have proved so successful is largely due to the very great assistance given by the County Representatives.

Town Representatives too have undertaken a good deal of additional work in connection with the M.O.S. scheme, and in addition many of them have organised local activities on a wide scale.

Delegates Meeting

In order to obtain the views of the Regional Representatives on the working of the Regional Scheme a Conference was held in Birmingham during April. It was as the result of recommendations made at that meeting that the Council has decided that the Corporate Members of the Society shall, in respect of all offices to be held from January 1, 1948, have the power of nominating and electing those officers who are to serve in their own areas.

Official Regional Meetings

The following is a list of the venues selected for the Official Regional Meetings held during the year ended September 30, 1947, together with the names of the representatives of the Council who attended :—

Date.	Region.	Venue.	Representatives.
April 20	3	Birmingham	The President and Council.
May 11	9	Weston-super-Mare.	Messrs. Bloomfield, Edwards and Milne.
June 22	2	Leeds ..	Messrs. Auchterlonie, Desmond and Edwards.
July 12	5	Cambridge ..	Messrs. Bloomfield, Clark, Desmond and Edwards.
Aug. 17	11	Prestatyn ..	Messrs. Auchterlonie and Edwards.
,, 24	2	Newcastle ..	Mr. Scarr.
,, 30	15	Belfast ..	Messrs. Milne and Scarr.
Sept. 14	1	Blackpool ..	Messrs. Auchterlonie, Bloomfield, Edwards and Milne.
,, 14	8	Farnborough	Mr. Hammans.
,, 20	10	Cardiff ..	The President, Messrs. Edwards and Morton Evans.
,, 28	7	London ..	The President and Members of Council.

O.R.M.'s were held in other Regions at various dates after September 30, 1947.

The support given to certain of these meetings was considerably less than anticipated due, no doubt, to the fact that six were held at the height of the holiday season.

The Council appreciates that the organisers were confronted with many difficulties; the fact that eleven meetings were held is a tribute to the resourcefulness of those responsible for the arrangements.

In future years it may be desirable to reduce the number of O.R.M.'s and to arrange for them to be held earlier in the year.

Regional Notes

In view of the fact that the majority of Regional Representatives present at the Delegates Meeting had expressed themselves as opposed to the continuation of Regional Notes, the Council decided to suspend publication for the time being.

R.S.G.B. Bulletin

The Council regrets that it has not yet been possible, due to paper rationing, to increase the size of the Society's Journal. The position in regard to paper supplies is still serious and little hope can be held out for an early return to the pre-war size.

In order to provide members with as much technical material as possible a new publication *The Proceedings of the R.S.G.B.* was issued in May. It is anticipated that until such time as the paper position improves *The Proceedings* will appear three times each year. The primary purpose of *The Proceedings* is to give publicity to papers read to the

Society at London meetings which would otherwise be reproduced in the BULLETIN.

The technical standard of the Society's Journal has been well maintained, but because of paper restrictions it has frequently not been possible to publish more than two technical contributions in any one issue. This has been due to the fact that the BULLETIN is required to give publicity to a wide range of topical matters including rules for and reports of Contests. Considerable space has also been devoted to matters relating to the Atlantic City Conference.

As from January 1, 1947, the Council agreed to pay for the copyright of all technical articles published. In deviating from a principle which had been adhered to from the inception of the BULLETIN 21 years earlier, the Council had in mind the thought that the offer to pay for the copyright would result in a higher technical standard being reached by contributors. In certain respects their goal has been achieved although it must be recorded that a large number of manuscripts fell far short of what the Technical Committee consider to be minimum standards.

The Council desires to record its thanks to all contributors to the BULLETIN and to those whose papers have been published in *The Proceedings*.

Technical Booklets

Throughout the year the Technical Committee of the Council has been engaged upon the task of producing a series of technical booklets covering a wide range of subjects. *Microwave Technique*, the first booklet in the series, is now on sale and two others are due to appear shortly. The Council records its thanks to the authors of these booklets and also to the co-opted members of the Technical Committee for their valuable assistance.

Due to increasing demands it became necessary during the year to authorise the reprinting of the *Transmitting Licence* and *Service Valve Equivalents* booklets.

The decision to break-up the type of the *Amateur Radio Handbook* and *Radio Handbook Supplement* was only taken after 189,500 copies of the former, and 115,000 copies of the latter publication had been sold. The Council cannot at the present time indicate when a new edition of the Handbook will appear, but it is anticipated that the new series of booklets will go far towards providing members with up-to-date information on technical subjects.

Headquarters' Station

During the year the Council has been pleased to record its thanks to several radio companies for gifts of equipment for use with the Headquarters' station. It is regretted that circumstances beyond the control of the Society have so far prevented the bringing into operation of the station.

The Council plans to use the station initially as a "band marker" and to that end numerous items of ancillary equipment have been purchased in readiness for the time when the station can be put into operation.

Atlantic City Conference

The year was marked by the International Telecommunications Conference held in Atlantic City, New Jersey, U.S.A. The Society was represented at this Conference by the President (Mr. S. K. Lewer, B.Sc., G6LJ) and the General Secretary (Mr. John Clarricoats, G6CL). During the period of the Conference, and subsequently, detailed reports have been published in the Society's Journal. The Council believes that the presence of Society Representatives at the Conference was fully appreciated by the U.K. delegation and by the delegations of other countries.

Conference Decisions

The final decisions reached at the Conference have recently been reported. These indicate that the whole Amateur Radio movement must remain on guard against further attacks on amateur frequency allocations.

The permissive clause in the Allocation Table which allows the U.K. to authorise its amateurs to continue to operate on certain frequencies in the band 1,715–2,000 kc/s. was inserted solely at the request of the Society's representatives.

The decision to allocate the band 3,500–3,800 kc/s. on a shared basis to amateurs in the European Region was taken after the Society's Representatives had stressed the importance of providing a wider range of frequencies at this part of the spectrum than the 100 kc/s. exclusive band proposed originally by the U.K. and certain other European nations.

The Council regrets that in spite of the most strenuous efforts which were made by the Society's representatives, one-half of the present 7 Mc/s. band has been lost in the European Region to broadcasting.

The decision of the Conference to reduce the width of the 14 Mc/s. band by 50 kc/s. is equally regretted.

Set off against these losses must be recorded the gain of an entirely new band between 21 and 21·45 Mc/s. which, in the opinion of the Council, should prove of considerable value for long-distance communication.

The reduction of 300 kc/s. in the width of the present 28–30 Mc/s. band is regretted, but the Council recognises that the services which will use the band 29·7–30 Mc/s. are essential.

The decision to allocate a new band between 144 and 146 Mc/s. (approximately 2 metres) is very desirable, especially in view of the fact that no provisions have been made in the Frequency Allocation Table for European amateurs to operate around 60 Mc/s. (5 metres).

The Council is pleased to record that five further V.H.F. bands are to be made available to amateurs and, in this connection, the hope is expressed that the licensing authority will be willing to authorise U.K. amateurs to use reasonably high power for experiments on frequencies above 144 Mc/s.

The Council is happy to record that its Representatives to the Atlantic City Conference received warm hospitality from the American Radio Relay League (through its President, Managing Secretary and other officers) and from a large number of U.S. amateurs living in the New York and Atlantic City areas.

The Council wishes to place on record its sincere thanks to Col. Sir Stanley Angwin, K.B.E., D.S.O., T.D. (Chairman of the U.K. delegation), for the valuable services which he rendered to Amateur Radio during the Conference. They also desire to thank Mr. A. H. Mumford, O.B.E. (U.K. spokesman in the Frequency Allocation Committee), and other members of the U.K. delegation who, by their words and actions, showed sympathetic appreciation of the requirements of the Amateur Service.

Amateur Licences

The interest which continues to be shown in Amateur Radio is reflected in a great increase in the number of licensed stations. As at September 30, 1947, the total had reached 5,526 compared with 3,808 a year earlier.

The decision of the G.P.O. to grant exemption from the Morse and/or Technical examinations to those who have served in certain branches of H.M. Forces has, no doubt, contributed to this large increase.

The Council has viewed with regret the results of

the Radio Amateurs' Examination held in May, 1947, when more than 60% of those who sat failed to achieve the pass standard. It would appear that some of those taking the examination were not adequately prepared.

An application made by the Society to the City and Guilds of London Institute (the examining body) for the holding of two examinations a year has been rejected on the grounds that (*a*) the Institute's syllabus is already overloaded, and (*b*) the Institute does not hold two examinations per year in any subject. An exception was made during 1946 in order to assist members returning from H.M. Forces.

At the request of the Council the G.P.O. agreed in June that amateurs resident in the Isle of Man shall use the prefix GD.

Throughout the year the Council has maintained a close liaison with the radio and other branches of the G.P.O., and numerous matters relating to the issue of licences have been dealt with.

Lecture Programme

The Council arranged a full lecture programme at the Institution of Electrical Engineers during the 1946–47 session and in general good support was forthcoming. A list of the lectures and speakers is given below :—

Oct., 1946.—Mr. D. W. Heightman, G6DH, "Recent Observations on the Propagation of 60 Mc/s. Signals." Mr. W. A. Scarr, M.A., G2WS, "Field Work on 60 Mc/s." Mr. E. J. Williams, B.Sc., G2XC, "Propagation Characteristics."

Nov., 1946.—Mr. A. F. Pearce, Ph.D., F.Inst.P., "Velocity Modulation Tubes for Centimetre Communication."

Dec., 1946.—Mr. H. G. Booker, Ph.D., "The Dependence of Ultra-Short Wave Radio Propagation on Weather."

Jan., 1947.—Mr. S. K. Lewer, B.Sc., G6LJ, Presidential Address.

Feb., 1947.—Mr. R. H. Hammans, G2IG, "Noise Limiters."

March, 1947.—Mr. A. A. Jones, G3RU, "Ex-Enemy Radio Equipment."

April, 1947.—Mr. W. H. Allen, M.B.E., G2UJ, "The Design and Construction of Short Wave Amateur Transmitters."

May, 1947.—Mr. T. W. Bennington (Engineering Division, B.B.C.), "Techniques for the Practical Application of Ionospheric Data to Short Wave Transmission and Reception."

In response to requests from members resident in the London Region who find it difficult to attend the meetings at the I.E.E. (which commence at 6.30 p.m.) the Council agreed to hold two special meetings at the Royal Hotel, Woburn Place, W.C.1. These were fairly well supported but the attendances did not, in the view of the Council, warrant a development of the project.

Contests

As the result of the energies of the Contests Committee the Society has been able to stage a wide range of Contests during the year. National Field Day and the B.E.R.U. Contests attracted good support as did the D/F Contest (an innovation), the 5 Metre Field Days, the Low Power Contest and the first section of the Top Band (160 metre) Contest.

The Council records its special thanks to the Committee for their work in drawing up the rules for contests and for judging and reporting upon the results.

Certificates

The Council revived the practice of offering special certificates to those interested in communication with or reception of British Empire stations.

Approval was also given to the award of a new certificate to be known as the Empire DX Certificate.

Experimenters' Contact Bureau

Although wide publicity was given to this project the Council regrets that, with few exceptions, the idea has not been well supported by members. It would appear that the majority of members interested in the experimental aspects of Amateur Radio are content to "plough a lone furrow" instead of exchanging views with other members interested in kindred subjects. The Council recognises that with a greatly increased membership and improved facilities for technical discussions at local meetings the demand for an Experimenters' Contact Bureau is to-day not so great as it was in pre-war years. Nevertheless, the Council believes that the project is worthy of greater support than it has so far received. With the opening up of new bands in the V.H.F. portion of the spectrum many members would probably benefit from an exchange of ideas through the medium of the Bureau.

QSL Bureau

The Council desires to record its warm thanks to the QSL Manager and all others who have assisted in the operation of the Bureau. The volume of work has increased very considerably and it is estimated that approximately 1 million cards passed through the Bureau during the year.

The voluntary assistance rendered by the QSL Manager (Mr. A. O. Milne) and his sub-managers has enabled the Society to provide a service which has been widely appreciated not only by home members but by amateurs of many other countries who have used the R.S.G.B. Bureau as a clearing house for overseas cards.

The Council recognises that ultimately the Bureau must be operated from Headquarters and with this in mind efforts are being made to obtain extra accommodation and staff—neither of which are easily obtainable in the London area.

Social Activities

During the year two London Members' Ladies Nights were held at the Royal Hotel. The first was well patronised and at the request of members a further event of a similar nature was held in September. Unfortunately this function did not receive the support anticipated, but the Council is aware that those who attended expressed satisfaction with the arrangements made. In future London social functions will be organised by the London Regional Representative.

The Council desires to record its thanks to the members of the Social Committee for the efficient and enthusiastic manner in which they have carried out their duties.

Committees of the Council

The following is a list of the Committees which were constituted during the year :—

Articles of Association.—Chairman, The President (Mr. S. K. Lewer, B.Sc., G6LJ).

Codes of Practice.—Chairman, Mr. I. D. Auchterlonie, G6OM.

Contests.—Chairman, Mr. W. H. Matthews, G2CD.

Finance and Staff.—Chairman, Mr. A. J. H. Watson, F.S.A.A., G2YD.

Membership.—Chairman, Mr. V. M. Desmond, G5VM.

Social.—Chairman, Mr. S. A. Howard, G8TY.

Technical.—Chairman, Mr. H. A. M. Clark, B.Sc.(Eng.), G6OT.

Amateur Radio Exhibition

Preparations were made during the year to hold an Amateur Radio Exhibition in London during November, 1947.

Affiliated Societies

During the year the Council has been pleased to grant affiliation to a number of Societies and Clubs. In many cases these organisations are closely associated with the local R.S.G.B. town group, an arrangement which has much to commend it especially in those towns where it is necessary to make a charge for the use of a meeting room. In such cases the membership subscription to the Affiliated Society covers the hire charges for accommodation.

Ministry of Supply Schemes

During the year as the result of negotiations between the Society and the Ministry of Supply, limited quantities of surplus Government transmitters were made available at agreed prices to members of the Society holding amateur transmitting licences.

As the Society is unable to participate in trading, the financial arrangements for the scheme were left in the hands of the County Representatives who acted as purchasing agents on behalf of local members. The arrangement appears to have operated quite successfully.

It is regretted that the Ministry has not yet agreed to extend the scheme to include other items of surplus equipment which are of particular interest to members.

Headquarters

Staff difficulties have not been entirely overcome although some slight improvement can be recorded in this respect. An assistant to the General Secretary has been engaged but for a variety of reasons no appointment to the post of Technical Manager has yet taken place. With a greatly enhanced membership and an increasing demand for technical publications the necessity for obtaining more junior staff is paramount.

The Council wishes to record its warm thanks to the Assistant Secretary (Miss A. M. Gadsden) for the efficient manner in which she dealt with the affairs of the Society during the General Secretary's absence in the United States as a Delegate to the International Telecommunications Conference.

Conclusion

It is not possible in this Report to refer to many other matters which were dealt with by the Council during the year, but a perusal of the Resumes of Council Meetings will show that they have been varied in character.

The Council again records its thanks to the General Secretary and his staff for the conscientious manner in which they have carried out the decisions and instructions of Council, and for the way in which they have dealt with a wide variety of routine matters often under extremely difficult and sometimes uncomfortable conditions.

Council Meeting Attendances

The following is a list of attendances at Council Meetings for the year ended September 30, 1947 :—

Name.	Maximum Possible Attendances.	Actual Attendance.
*S. K. Lewer	14	10
V. M. Desmond	11	7
E. L. Gardiner	14	9
A. J. H. Watson	14	12
H. A. M. Clark	14	11
A. O. Milne	14	14
A. E. Watts	14	12
†I. D. Auchterlonie	11	9
†G. F. Bloomfield	11	10
C. H. L. Edwards	14	14
K. Morton Evans	14	10
R. H. Hammans	14	8
J. W. Mathews	14	14
†W. A. Scarr	11	9
‡P. C. G. Bradley	3	3
‡F. G. Hoare	3	3
‡S. E. Langley	3	2
‡A. D. Gay	3	1

* The President was absent from four meetings whilst in the U.S.A.
† Elected, January 1, 1947.
‡ Retired, December 31, 1946.

The Radio Amateurs' Examination

THOSE who are contemplating sitting for the Radio Amateurs' Examination—the next is to be held in May, 1948—will be interested to learn that *E.M.I. Institutes*, one of the associate companies within the E.M.I. Group, has prepared, amongst others, a postal course of instruction especially designed to meet the syllabus laid down for this examination by the Post Office and the City and Guilds of London Institute. The course consists of 15 lessons ; it includes a certain amount of elementary electricity and magnetism and, so far as the radio lessons are concerned, is essentially practical in character. A candidate who enrols for this course within the next few weeks should be able to complete his studies in his spare time by May next and thus feel confident of his ability to pass the examination.

In addition to the above-mentioned postal course, *E.M.I. Institutes* are running two evening courses commencing on January 19, 1948. These courses are held on each of three evenings a week. One of them is devoted to Practical Radio and consists almost entirely of laboratory work, including that of a general experimental character, as well as exercises in the testing and servicing of commercial broadcast receivers of various types. The other is devoted to Television and will consist of lectures with practical demonstrations. Candidates applying for this latter course should possess a fairly sound previous knowledge of radio principles, since lecturers will assume this standard. Those who are interested in the postal course, or in the series of evening classes, should address themselves to *The Principal, E.M.I. Institutes, Ltd., 43 Grove Park Road, Chiswick, London, W.4.*

Strays

Any member who is waiting for a QSL from OK2ZA to confirm a 58 Mc/s. contact on August 3, should write to Mr. F. T. Smith (G6FK), 57 Dudley Road, Wolverhampton. G6FK has received a card which he believes was intended for a station with a similar call to his own.

* * *

Mr. W. Limehouse, G2FDF, of Walton-on-Thames (who left for Baghdad at the end of October) hopes to be on the air with a YI call by the time this appears in print. In a letter to G2VV he sends 73 to all old friends. His full address is:—Vickers Rep., c/o Iraqui Airways, Baghdad Airport, Baghdad, Iraq.

* * *

Major J. R. Farr, G3CJG, ex-VU2JG expects shortly to be operating from British East Africa with either a VQ3 or 4 call. His permanent address is " Whingreen," Cornwood, Ivybridge, S. Devon.

THE MONTH ON THE AIR

By A. O. MILNE (G2MI)*

DX Awards

HOW many would-be claimants for the Empire DX Certificate have discovered, to their chagrin, that several choice cards which they have been saving against the day they can present their claim, bear no mention of the band worked ? We take this opportunity therefore to impress upon amateurs everywhere the desirability of clearly mentioning on their cards, such important facts as the band used, phone or C.W., etc.

Nothing is more annoying than to possess a card from a rare zone which, if only it mentioned the band, would put the holder into possession of some much sought after certificate.

Eritrea

We have taken up the matter of the MD3 calls with I6ZJ and this is what he says. " MD3 is issued only to uniformed service personnel. Civilians in Eritrea will be issued with the authorised international prefix. These instructions were laid down by the Mid-East Communications Board. No one knew the prefix for Eritrea and apparently there never was one. The conclusion was reached that I6 would do, merely because I6USA had become well known and his call sign generally accepted. So I6 it is until someone decides to make a change."

VR6AA

The response to the note last month has been most disappointing. Only 25 people have replied. If it had not been for the fact that one or two made very handsome contributions the balance outstanding would be even bigger. Come, come, DX'ers, surely you can do better than that ? In case anyone has a mistaken impression that any preference will be given to subscribers, it can be stated here and now that such is most definitely not the case. No amounts would be mentioned and, in fact, as Nelson Dyett will have left the island before a letter can reach him, a list of subscribers will not now be sent to him. This was contemplated only to show him how widespread the response had been. As things stand at the moment it would only emphasise the lack of interest !

Notes and News

GW3QN recently heard the genuine W2ARE working the phoney W2ARE. You can imagine the situation ! Ignore the W2ARE who chirps and has a T6 note.

G5FN draws attention to the fact that the following frequencies in the 1·7 Mc/s. band are in use by the services in the Thames area and should be avoided ; 1740, 1780, 1870, 1875 and 1930 kc/s.

G5RQ is maintaining his father/son schedule once more. His son is now VP4TO, frequencies are 7012, 14024 and 28048 kc/s. C.W. G5CI says ZC1AL will probably be moving to HZ shortly. ZC1WS is a pirate. I6ZJ tells us that I6AB is the new call of I1AHC/I6, one time I7AA ; QSL either via A.R.I. or R.S.G.B. G3DI is going to live in Pennsylvania. He left on November 10 and sends 73 to all old friends.

A vote of grateful thanks to Col. Whatman, VU2BC, who has so efficiently carried on the VU QSL Bureau. He is now back in G. The Bureau for the Indian sub-continent is now being handled by VU2JP.

G5CR has worked LZ1SV on 3504 kc/s. He claims to be in Sofia. OX3ME Daneborg on 3504 is another nice one but is V.F.O. Both contacts were made around 06.00 G.M.T. OX3ME QSL's and says it will be dark for four months and cards will be forthcoming in about one year's time. QSL to him via E.D.R. or to APO859 c/o P.M.N.Y.

G3BLT says VE8NW is at Clyde, River, Baffin Is. Name is Neville Whitaker. QSL's should be sent c/o VE3QB. His next supply plane arrives in February. G2MI's card to PK2RK has been returned " unknown." HB9CE gives details of several choice DX contacts. UA1KED, Rudolf Is., Franz Josefesland, 82° north, 52° east. I1AEW, 14 Mc/s. phone; Delio, Lumban, Via Sardegna 8, Sassari, Sardinia. I1AHK, also 14 Mc/s. phone, Aldo Ravenna, Via Principe Amedeo 8, Cagliari, Sardinia. HE1EO, QSL via HB9EO is O.K. in Lichtenstein. LU1ZA is Alfredo Torres, South Orkney Is. He is with an Argentinian Expedition and will be returning in six months' time.

XZ2HP is G3ATH ex ZB2A, 53537 S/Ldr. Pain, Officers Mess, R.A.F., Mingaladon, Burma. Using 6L6—807 with 24 watts has worked 47 countries. Says XZ2DN will be leaving at the end of the year. T1NS, who will shortly have an MD call, says all QSO's with his call sign on 7 Mc/s. are phoney. QTH F/O B. White, S.O., R.A.F., Castel Benito, Tripolitania. G2FDF/YI is O.K. Uses 50 watts and complains of the activities of the QSO busters. VQ5FCA is now VQ4FCA. ST2JF is ex ZC6JF. ST2MB and ST2RL are also O.K.

W6AY via G5WI denies that C6HH is in Zone 23. He is in Zone 24 at Shensi about 150 miles east of the Zone 23 border. Zone 23 consists of Tibet, Sinkiang (Chinese Turkestan), Tannu Tuva, the Kansu province of China, Outer Mongolia and Inner Mongolia except Chapar province. Only known stations active in Zone 23 are AC4YN and C8YR.

GM8AT has worked W5FTA/P on 28 Mc/s. phone running around Hyde Park, N.Y., in a car. VE2ZA is former G8DQ says G5IP. BRS11494 says QSL's to Guam may now go to Guam Amateur Radio League, P.O. Box 100, Guam. MD7RJ is O.K. and QSL's. GW4CK worked ET3AF, Box 858, Addis Ababa, and has his card.

A big pile of cards has just arrived from XE1A via New Zealand. Reckon that fellow works so many he just gets dizzy ! G4KS has a card from CT1PJ for a call which looks like his. Any claimants ? G4KG ? Tommy Lott, G2CIN has arrived in Canada and has already been heard from several Canadian stations. He says the hospitality of the VE's is simply breathtaking. GM6LS gives MD6AR as c/o R.A.F., Habbanieh, Iraq, ZS6OL has now left Buchuanaland.

Ex ZC6SX apologises for not sending QSL's to listeners but says the job is beyond him. All contacts have been confirmed. He is now G3BWO.

G3BI gives VS9AF as c/o A. Besse & Co., Aden. G6RH's list includes TG9JK 14125 T9, VS2BX 14050 T6, KM6AB 14085 T9, KP6AA 14075 T9, UL7BS 14100 T8, EA8CR 14110 T9, ZM6AF 14080 T8. Nice work.

BERS195 has forwarded a QTH for C9JW, Wei, Tsu, Ye, c/o, Bank of China, Monkden, Manchuria, 14 Mc/s., T6.

See you in 1948.

* 29 Kechill Gardens, Hayes, Bromley, Kent.

The Month on Five—and Six

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

THE phenomenal rise in the M.U.F. has produced such outstanding results during recent weeks that it has become a topic of conversation far outside the amateur fraternity. Interference with television broadcasts by signals from across the Atlantic has made first-class " copy " for all sections of the press and many thousands of the non-technical public will have associated radio with solar activity for the first time.

G2VV found the vision broadcast on November 20th blotted out by a strong carrier at 3.40 p.m. Tuning round on the sound side of his television set he picked up American voices on a channel close to the vision frequency and later identified an American Police Headquarters Station calling police cars.

Dx on Six

Those who have been able to listen, and in some cases to operate, on 50 Mc/s. have, during the brief spells when the M.U.F. has risen above that frequency, achieved amazing results. Early in November, as already reported, the Egyptian stations MD5KW and SU1HF were heard and worked in the morning about 09.00 G.M.T. on numerous occasions. By the way MD5KW, will acknowledge all reports on his 50 Mc/s. automatic transmissions. He believes several Gs have heard him but have not yet reported the fact. Later in the month, the early afternoons produced signals from Canada and almost all parts of the States, the band being " open " for two or three hours on the best days.

Nevertheless, as far as is known, the M.U.F. has so far been well below the lower limit of the five-metre band and no DX has yet been reported on 58.5 Mc/s. The highest M.U.F. would appear to have been in the region of 53 Mc/s.

Lists of American stations worked in November by those who have the temporary six-metre permits, are too long to set out in full. The imposing log of six metre QSO's by G6LK includes MD, SU, VE1, 2, 3 and W1, 2, 3, 4, 5, 8, 9 and 0. G5BD's log also includes VE and six American districts. His aerial is a vertical dipole 50 feet high fed from a 35T, while 6LK uses a 4 element wide-spaced beam. G2JU has worked VE and W on " six," but being within 50 miles of London, has missed many chances through having to observe restricted hours. Like several others, he comments on the excellence of conditions on November 22nd. Many listeners found the six-metre band full of American signals on that afternoon, the " star-turn " being W5VY of Texas who was S9 on phone for most listeners in this country.

It remains to be seen whether the band will continue to open up for N–S and E–W DX throughout the winter. Some are of opinion that conditions are likely to fall off during December and January with a second peak period in the early spring, on the lines of the usual variations on 28 Mc/s.

Curtain

And now it is the sad duty of the writer to bid farewell, as far as the " Month on Five " is concerned, to all who regularly read these notes and particularly to those who have regularly sent in contributions. Pressure of other Society duties will make it impossible for the writer to give sufficient time to the band next year and for the time being at any rate the care of these notes will be in other hands. Have no fear, though, for the task has fallen to the expert hand of Mr. W. H. Allen, G2UJ, whose knowledge and experience of V.H.F. affairs is widely known and appreciated. UJ's address is 32 Earls Road, Tunbridge Wells, Kent, telephone Tunbridge Wells 20924. The best welcome which members can give to 2UJ is a shower of notes on 5 and 6 metre work—to reach him by Christmas for the January " Bull."

A strange opinion seems to have been rife in certain quarters recently, that there is something boastful in reporting on one's amateur activities and that no self-respecting amateur would wish to see his name in print. This rather narrow conception of things would seem to arise through a failure to understand the importance of co-operative work. One does not (let it be hoped) publicise one's work for personal glorification, but as a contribution to the advancement of the science and in order that others may have the benefit of one's opinions and experiences. The Society exists largely for the purpose of co-ordinating the work of a large body of individual experimenters and it is only as those workers make their own efforts and results known to the membership generally, that the Society can fully achieve its purpose.

Five metres is the experimenters' band " par excellence "—let us give the work all possible publicity however humble our own efforts may be. *Au revoir de G2WS !*

LETTERS TO THE EDITOR

Calibration Service

DEAR SIR,—In connection with the notice re a crystal calibration service, on page 94 of the November issue of the BULLETIN, we would point out that this company has run a similar calibration service for a number of years past (ever since 1928 to be exact).

Crystals can either be mounted or unmounted, and the service is available for crystals of our own, or any other manufacture. The charge of 2/6 per crystal, plus 6d. to cover return postage costs, includes the issue of an authorised certificate of calibration, but does not include the cost of re-engraving the crystal holder. Where this is possible, and is desired, it can be done at an additional charge of 2/6.

Crystals should be addressed to The Quartz Crystal Co. Ltd., Calibration Department, 63–71 Kingston Road, New Malden, Surrey.

Yours faithfully,
THE QUARTZ CRYSTAL CO. LTD.

Those 813's

DEAR SIR,—As one of the small group who entered for, and thoroughly enjoyed, the Low Power Contest, I am in agreement with your remarks on the use of excessive power.

However, there is one point that might be mentioned : owing to the demise of the 814, there is nothing much in the tetrode line now between the 807 and the 813. In addition, many of us like using push-pull. Of the stations I have visited, two have used push-pull 813's simply because they could not get 150 watts of telephony into a pair of 807's. This is legitimate enough, even if one would query the use of 150 watts of phone. Both stations were running well within the 150 watts, and both had to put up with quite a bit of abuse on the subject of push-pull 813's.

The largest outfit I have seen used 750 watts into a pair of triodes—and got away with it as long as no mention was made of the modulator, simply because the triodes were so large that very few people knew anything about them.

For myself, I have considered trying a year on 10 watts, but I do like having 250 for matching up the aerial.

JOHN B. ROSCOE, G4QK.

International Club Meeting

DEAR SIR,—On November 30th the Coventry Amateur Radio Society took part in an event which is believed to be unique in Amateur Radio history, an International Club Meeting between members of C.A.R.S. and members of the Frankford Radio Club of Philadelphia, U.S.A. Communication was maintained for two hours on the 28 Mc/s. band with full loudspeaker strength both ways, and some thirty members at G5PP, G6TD and G3DJO were able to converse with their " opposite numbers " at W2SAI and W2QKE. In addition G2YS and G5SK were relayed by 5PP from their own transmissions on the 3·5 Mc/s. band. At the American end W2SAI relayed a number of local members working on 50 Mc/s., including the Secretary, Frank McEnanem, W31XN.

Further meetings of a similar nature are planned for the New Year, with the idea of encouraging firm friendships and greater co-operation. The two Societies exchange regular bulletins of personal news, club activities and photographs, and the Frankford members have generously forwarded a number of food parcels and items of equipment for the benefit of the Coventry Society. The proceedings were inaugurated by the Deputy Mayor, Coun. W. H. Malcolm, J.P., G6WX, who is President of C.A.R.S.

J. W. SWINNERTON, C.A.R.S., Hon. Secretary.

The G8PO Aerial

DEAR SIR,—With reference to G8PO's article on his aerial system in the November issue, I am at a loss to understand how the high front-to-back ratio of 20–30db is obtained.

In Fig. 2 it is shown that radiation from the two elements is additive to the right, and 90° out of phase to the left. Now, with equal currents fed to the two radiators, and taking the amplitude of radiation from each to be "A, we shall have an amplitude of 2A to the right. It is not, of course, correct to say that since the radiation from the two elements is 90° out of phase to the left, it is therefore reduced in that direction. It is in fact increased by a factor of $\sqrt{2}$, the waves being added vectorially. Thus the radiation in that direction is $\sqrt{2}A$, and it would seem that the theoretical figure for the front-to-back ratio is $2/\sqrt{2}$ (*i.e.* $\sqrt{2}$.)

This is confirmed on page 647 of Henney's *Radio Engineering Handbook*, where a polar diagram is given for a two element array with eighth-wave spacing, and with the elements fed 45° out of phase. The pattern shown is very little different from that for an ordinary dipole, and whilst it is intended to be a horizontal pattern for vertical elements, is also applicable to the case of horizontal elements, when it becomes a vertical polar diagram.

It would be interesting to know what factors cause this large discrepancy between the theoretical and practical front-to-back ratios obtained (1·4 theoretical, and greater than 10, practical). How was the front-to-back ratio measured ? What was the height of the aerial, and were there any other metallic objects in the vicinity ?

Yours faithfully,
C. W. CRAGG (G2HDU).

13 Station Road, Sidcup, Kent.

Wireless World Diary

This ever-popular diary is now on sale at booksellers and stationers price 3s. 8d. (including purchase tax). The reference section contains 80 pages of useful information including an extensive section on " Valve Base Connections." Some 400 valves are covered. An interesting innovation is a tabular forecast of the predicted optimum working frequencies for short wave transmissions throughout the year.

All the material in the reference section has been completely revised.

Can You Help ?

Mr. D. T. Walker, GM3CKN, 9 Park Avenue, Dundee, who has an American BC–455–B " Command " receiver would be grateful for details of amateur conversion or a circuit diagram.

Mr. G. W. Howes, G3ADW, 14 Sinhurst Road, Camberley, Surrey, requires a circuit diagram of the Hallicrafter S20 Sky Champion.

Mr. F. R. Martyr, BRS8913, Horwell House, Launceston, Cornwall, would appreciate the loan of manuals for the Army type 109 and the 358x receivers.

Mr. A. J. Merriman, BRS15802, 351 Leigh Road, Leigh, Lancashire, seeks details of the Test Set Type 228, Oscillator Unit Type 230 and the Aerial System Type 355.

Mr. M. H. Tainton, G3CRI, 80 Sydney Street, Burton-on-Trent, Staffs, requires a circuit diagram of the Army No. 22 Transceiver.

Mr. J. W. Hughes, BRS5995, 40 King Street South, Rochdale, Lancs, requires the instructional manuals of the Scott Type SLR–F and the AR88D. He may be able to exchange a CR91 manual for the AR88D manual.

Mr. L. F. S. Parker, G5LP, 22 Second Avenue, Wellingborough, Northants, requires the loan of the instructional manual for the Hammarlund Super Pro Receiver Type SX.

Offers

Mr. D. Finlay Maxwell, GM3BGA, Beechbank, Galashiels, possesses a valve tester covering more than 3,000 German, Russian, Italian, and Scandanavian types and is willing to supply characteristics or performance figures of members' valves.

Mr. A. R. Kerr, BRS9936, 73 Lynwood Road, Ealing, London, W.5, offers to supply information on the Oscillator Type 37 (including modifications for 14 Mc/s. operation); Receiver R1155 ; and Wavemeter Mk. II D. No. 1. A stamped addressed envelope should accompany all enquiries.

NEWS FROM HEADQUARTERS

COUNCIL, 1947

President :
STANLEY K. LEWER, B.Sc., G6LJ.

Executive Vice-President : V. M. Desmond, G5VM.
Hon. Secretary : H. A. M. Clark, B.Sc.(Eng.), G6OT.
Hon. Treasurer : A. J. H. Watson, F.S.A.A., G2YD.
Hon. Editor : Arthur O. Milne, G2MI.
Immediate Past President : E. L. Gardiner, B.Sc., G6GR.

Members : I. D. Auchterlonie, G6OM, G. F. Bloomfield, Ph.D., A.R.I.C., G2NR, C. H. L. Edwards, A.M.I.E.E., G8TL, K. Morton Evans, O.B.E., G5KJ, R. H. Hammans, G2IG, J. W. Mathews, G6LL, W. A. Scarr, M.A., G2WS.

G.P.O. Liaison Officer: Arthur E. Watts, G6UN.
General Secretary : John Clarricoats, G6CL.

October Council Meeting

Resume of the Minutes of a Meeting of the Council of the Incorporated Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on October 13, 1947, at 6 p.m.

Present.—The President (Mr. S. K. Lewer in the Chair), Messrs. Auchterlonie, Clark, Desmond, Edwards, Evans, Gardiner, Hammans, Mathews, Milne, Scarr, Watson, Watts and John Clarricoats (General Secretary).

Apology.—An apology for absence was presented on behalf of Dr. Bloomfield.

Finance.
Resolved to accept and adopt the Cash Account for the month ended September 30, 1947.

Films.
Resolved
(*a*) to authorise the preparation of one copy of the 1947 N.F.D. and D/F Field Day films.
(*b*) to defer, for consideration later, a suggestion that the Atlantic City Conference film be duplicated.
(*c*) to obtain a report upon the condition of all pre-war Society films.

Modifications to Amateur Licence.
Resolved to refer back to the G.P.O. for further consideration proposals submitted by them for modifying certain clauses in the Amateur Licence.

Taxi Service Radio.
It was reported that the G.P.O. have issued a licence to a taxi service to operate on 77 Mc/s.

QSL Bureau.
Resolved
(*a*) to set up a QSL Bureau Committee to consider how best the Bureau can be operated in the future.
(*b*) to appoint Messrs. Evans, Mathews and Milne to serve on the Committee, and to give the Committee power to co-opt.
(*c*) to inform the Committee that within their terms of reference they are empowered to seek accommodation to house the QSL Bureau, Headquarters' station and the Society's Workshop.

The President and other members of Council paid a warm tribute to Mr. Milne for the work which he is carrying out as QSL Manager.

Regional Notes.
Resolved by 7 votes to 2 not to revive the publication of Regional Notes.

Messrs. Auchterlonie and Mathews asked that their names be recorded as voting against the motion.

The Hon. Treasurer pointed out that the cost of publishing a monthly 8 page Regional Notes Supplement amounted to approximately £1,200 in a full year.

Contests Committee.
Resolved
(*a*) to approve the holding of a 5-Metre Contest on December 7, 1947, provided a clause covering power cuts is included in the Rules.
(*b*) to reject a recommendation that Code Proficiency Certificates be awarded, and to point out to the Committee that such certificates would lose much of their value unless the tests include the reception of code, which form of transmission is not permitted under the terms of an amateur licence.
(*c*) to award a miniature trophy to the British Isles Winner of the V.E.R.O.N. European DX Contest.

The Council considered recommendations made by the Committee in regard to the 1948 B.E.R.U. Contests.

Resolved to pass to the Contests Committee for their comments a letter received from an Australian B.E.R.S. member protesting against the decision of the Committee to declare void the 1947 B.E.R.U. Receiving Contest.

Terms of Reference for Committees.
Resolved to draw up revised terms of reference for all Committees of the Council.

Membership Committee.
Resolved
(*a*) to elect 277 Corporate Members, 58 Associates and 11 Junior Associates.
(*b*) to transfer 11 Junior Associates to Corporate Membership.
(*c*) to grant affiliation to the Yeovil Amateur Radio Club.

Technical Committee.
Resolved
(*a*) to place orders for 20,000 copies of each of the new booklets " Valve Technique " and " V.H.F. Technique."
(*b*) to award the Norman Keith Adams Prize for 1947 jointly to Messrs. D. W. Heightman, G6DH, and E. J. Williams, B.Sc., G2XC, for their paper " Five Metre Propagation Characteristics."
(*c*) to award honoraria totalling £32 11s. 0d. to 14 contributors to the first six issues of Vol. XXII of the R.S.G.B. BULLETIN.
(*d*) to award honoraria totalling £21 to Messrs. Corfield and Jones co-authors of the booklet " Service Valve Equivalents."
(*e*) to instruct the Editor to publish all Contest Committee Reports and Rules, together with " The Month on the Air " and " The Month on Five " in 6pt. type.

TROPHY WINNERS

The Council has awarded the R.O.T.A.B. trophy for the current year to Mr. J. M. Kirk, G6ZO of Totteridge, Herts, in recognition of his outstanding and consistent long distance communication work.

The Council has awarded the Wortley Talbot trophy to Mr. Denis Heightman, G6DH, of Clacton, Essex, in recognition of his achievement in effecting the first two-way Transatlantic contact on 50 Mc/s

Atlantic City Reports.
Resolved to convene a Special Meeting of the Council to consider matters of policy referred to in the Reports issued by the President and Secretary after their visit to the U.S.A.

Presentations.
Resolved to purchase two suitable mementoes for presentation to Messrs. H. B. Lockwood, W2HFS, and G. C. Giberson, W2PG, in appreciation of their services to the President and Secretary during their visit to the U.S.A.

Miniatures and Replicas.
Resolved to place orders for the supply of 13 silver miniatures and replicas and 3 N.F.D. Shield Replicas at a cost not exceeding £50.

Erection of Aerials on Prefabricated Housing Estates.
It was reported that according to information received, the Ministry of Health has not banned the erection of aerials on prefabricated housing estates.

Band Planning.
Resolved to consider the question of Band Planning at the Special Council Meeting.

Headquarters' Station.
It was reported that to date the G.P.O. had not issued a licence.

Gift Parcels.
It was reported that offers to provide gift parcels had been received from the Egremont (New Zealand) Branch of N.Z.A.R.T. and from a group of members in Durban (South Africa).

Manchester Representation.
Resolved to accept a suggestion that for the years 1948 and 1949, Manchester shall be represented by four Area Representatives instead of one Town Representative.

Interference to Broadcasting.
It was reported that the G.P.O. had, during the past 3 months, attributed 86 complaints of interference to broadcasting to amateurs and that during the same period 34 complaints of interference to television had been attributed to amateurs.

The meeting terminated at 10.30 p.m.

Returned Bulletins

Every month large numbers of BULLETINS are returned to Headquarters marked " gone away." May we again appeal to members to co-operate by notifying changes of address promptly to H.Q.?

Election of Representatives

The following are the results of the elections for Regional, County, and Town Representatives:—

Regional Representatives

Region.		*No. of Votes.*
4 ..	J. Curnow, G6CW ..	16
	*L. Ridgway, G2RI ..	32
	Dr. E. Vance, G8SA ..	28
5 ..	*S. Granfield, G5BQ ..	34
	R. Varney, G5RV ..	10
7 ..	*H. McFarlane, G8SK ..	18
	P. Thorogood, G4KD ..	11
9 ..	F. Bedwell, G8DT ..	23
	*A. Uppington, G2BAR ..	53
14 ..	D. MacQueen, GM4PW ..	8
	*D. Macadie, GM6MD ..	31
15 ..	*S. Johnson, GI5SJ ..	23
	F. A. Robb, GI6TK ..	19

County Representatives

Region.			*No. of Votes.*
3	Worcester ..	K. Hopkinson, G8QX ..	13
		*J. Timbrell, G6OI ..	38
8	Hampshire ..	*K. Jackson, G3KJ ..	43
		E. Kentsbeer, G8JB ..	27
9	Gloucestershire ..	*B. Morrissey, G5YK ..	50
		R. Waite, G3PZ ..	23
15	Co. Down ..	*N. Lowden, GI2HLT ..	15
		J. Maxwell, GI3ML ..	3

Town Representatives

1	Manchester ..	*J. Machent, G3SP ..	5
		H. Bailey ..	—
	Southport ..	*J. Nuttall, G6SQ ..	22
		R. Woodroffe, G2DQX ..	8

* *Denotes elected.*

If, as is suspected, any votes for Representatives have been included in Council Ballot Envelopes such votes will be declared null and void. The Council Ballot envelopes will remain sealed until opened on December 18 by the appointed scrutineers.

A circular outlining the duties of all representatives is being issued by the Council.

Town Representatives

The following Town Representatives have been elected since the previous list was prepared:—

Region.		
1	Lancaster ..	R. Cordingley, G3BAP, 61 Cleveleys Avenue.
2	Huddersfield ..	J. E. Church, G2BMC, 10 The Lodge, Linthwaite.
3	Shrewsbury ..	E. R. Westlake, G6KR, Ardlui, Wenlock Road.
5	Southend ..	H. W. Evens, G6CH, Elm Cott, Underhill Road, South Benfleet.
7	East Molesey ..	L. Cooper, G5LC, 3 Summer Avenue.
	Reigate and Redhill ..	L. Knight, G5LK, 6 Madeira Walk, Reigate.
	St. Albans ..	L. J. Groves, G4GT, 19 Vernon Close.
9	Bath ..	J. F. S. Carpenter, G8JQ, "Towerscote," Mount Beacon.
	Exeter ..	E. G. Wheatcroft, BRS.13,968, 34, Lethbridge Road.
	Falmouth ..	A. L. Rogers, G2FQD, 25A Arwenack Street.
	Plymouth ..	J. Eddy, G3TX, 55 Greenbank Avenue, Lipson.
	Weston-super-Mare	W. C. Holley, G5TN, 252 Locking Road.

"Amateur Licence"

This was the title of a 30 minutes' feature broadcast in the B.B.C. Overseas Service during the week beginning December 1. Those taking part were Sir Robert Watson Watt, Dr. R. L. Smith Rose (Honorary Member), Mr. Gerald Marcuse, G2NM (Past President), Mr. E. J. Williams, G2XC, Mr. John Clarricoats, G6CL, and his son Peter. The voices of Mr. Arthur Milne, G2MI, and Mr. Clem Gilberson, W2PG, were also heard.

The theme of the broadcast was to show how the radio amateur contributed to the development of broadcasting 25 years ago, and how, in more recent years, radio amateurs have played an important part in the solution of V.H.F. and other problems.

Sir Robert Watson Watt paid a high tribute to the work of Britain's radio amateurs during the recent war, whilst Dr. Smith Rose laid emphasis on the value of systematic observations made by amateurs.

Mr. Marcuse spoke of his early long-distance short-wave contacts, mentioning in particular his contact in 1926 with the Rice Expedition then in Brazil. Mr. Williams, an ex-R.A.F. Signals Officer, related personal war-time experiences and spoke of the great increase in interest in the V.H.F.s, making special reference to the recent epoch-making 6 Metres contacts.

Mr. Clarricoats mentioned the growth of the R.S.G.B. during the past 25 years. Peter Clarricoats was heard making a two-way trans-Atlantic contact with W2PG through station G2MI.

Efforts are being made to persuade the B.B.C. to rebroadcast this programme in the Home Service.

"Norman's Hamfest"

An event took place on Sunday, November 23, which will long be remembered by those privileged to attend, for on that day Norman Turner (G4NT on the air) held another of his famous Hamfests at the Chiltern Works, High Wycombe.

The organisers expected a fair crowd, as the fame of the first of these events had already spread far and wide, but they hardly expected an attendance of more than 180.

There was something for all. A technical lecture by the "aerials wizard," "Dud" Charman, G6CJ; a "technical mistakes" competition arranged by H. J. Sherry, G6JK; a film show which appealed to everyone; a lucky draw in which most people seemed to win a prize; a fascinating lecture and demonstration by Mr. Peck of super high speed photography, in which the audience were able to see a bullet shot from a gun; and the announcement made by G4NT of a transmitting and receiving contest open to all present, in conjunction with the Dayton (Ohio) Amateur Radio Society, who are putting up some magnificent prizes to the value of nearly 500 dollars for the G's to win. Mention must also be made of the very fine meal laid on by the canteen staff and their helpers.

Following tea Mr. Kenneth Alford, G2DX, one of our oldest amateurs, spoke for the visitors to express their appreciation of the hospitality provided.

During the evening drinks and sandwiches were available "on the house" and later, to the "music" of the All Hamband ringing in their ears, the guests gradually departed (one to as far as N. Wales) after what must surely rank as one of the finest Amateur Radio social events ever held.

Luton and District Radio Society

New members will be welcomed at the weekly meetings of the Society held at the Surrey Street School, Luton, 7.30 p.m. Mondays. At a recent meeting Mr. R. Palmer G5PP, of Coventry, described practical methods of matching aerial feeders. The Hon. Secretary is Mr. W. Green (G3QG), 158 Westmoreland Avenue, Limbury, Luton.

Montreal Amateur Radio Club

Mr. Hal Elliott, VE2KS, President of the above club, extends a warm welcome to visiting amateurs. The club meets on the last Wednesday of each month and has a membership of 290—G8RN and G2CIN have recently joined.

M.A.R.C. have formed a special committee to organise the despatch of food parcels to U.K. amateurs. Consignees will be chosen by lot from QSL cards received at the VE2 Bureau (Box 1, Station D, Montreal). This gesture on the part of our Canadian friends is most warmly appreciated.

Stourbridge & District Radio Society

Membership has now reached 53 of whom 28 hold transmitting licences. Mr. Hunt, of *Hifi Ltd.*, recently lectured on "High Fidelity Amplifiers." New members are welcome and enquiries should be addressed to the Secretary: Mr. W. A. Higgins, 35 John Street, Brierley Hill, Staffs.

West Cornwall Radio Club

The West Cornwall Radio Club held its Second Annual Dinner at the home of G3AUN (the Coach and Horses Hotel, Kenneggy) on November 6, 1947.

The function was a great success with a 90 per cent. attendance of 47 members. All members are also members of the R.S.G.B. G2DDR proposed the toast of the R.S.G.B. and the C.R. (G2WW) responded. Reference was made to the nomination of two new T.R.'s to serve the growing membership in the Redruth and Falmouth areas.

G2BJS proposed the toast of the Club to which response was made by the Secretary, G2JL, who referred to the need of keeping in close touch now that we are denied the means of attending each other's meetings.

G3AET proposed the toast of the B.R.S. and offered a small Cup for competition between receiving members. BRS12566 wittily responded.

United Nations Short Wave Broadcasts

Official programmes of news, interviews and background talks on the work of the United Nations are broadcast to Europe daily, except Sundays, at 22.00 G.M.T., on 11,725, 15,290 and 17,750 kc/s. Details of live transmissions of the discussions in the General Assembly or in one of the Committees are announced at 14.30 G.M.T. on 17,820 and 15,190 kc/s.

Instructional Film Available

A film, "Invicta Introduce," has been produced by Mr. T. L. Franklin (G5HO) showing what goes on before a new radio set is put on the market—design, tooling, manufacture, testing etc.

It is in 16 mm. black and white, silent, 800 ft. with a running time of 30 minutes approximately, and is available on loan, free of charge, from Messrs. Invicta Radio Ltd., Parkhurst Rd., London N.7. Applications should state whether 800 ft. or 400 ft. reels are required.

Congrats

To Jack Hum, G5UM, who is to be married at St. Peters Church, Sible Hedingham, Essex, on December 20 to Miss Grade Harrod. The bridal couple will live at "Wyldes," Burnham Lane, Bulls Green, Knebworth, Herts, at which address they will be glad to welcome old friends.

Radio Amateurs' Examination

For the benefit of members who propose sitting for future Radio Amateurs' Examinations we give below a copy of the question paper set for the May, 1947, examination. Candidates were invited to attempt as many questions as possible and to make use of diagrams where applicable. The maximum possible marks obtainable is affixed to each question. The duration of the examination was three hours.

(1) An alternating voltage of 10 volts at a frequency of 100 Mc/s. is applied to a circuit consisting of the following elements connected in series: (i) An inductance of 10 micro-Henrys; (ii) a capacitance of 10 pico-farads; (iii) a resistance of 10 ohms.
   (*a*) What current flows through the circuit? (5 marks.)
   (*b*) What voltage appears across the inductance? (5 marks.)

(2) What is meant by the "selectivity" of a tuned circuit? On what circuit constants does it depend?
   Why is this quality necessary in a receiver? (10 marks.)

(3) What is understood by the term "C.W." and what special method is needed to detect C.W. signals? Describe a circuit arrangement which could be used for this purpose, illustrating your answer by a diagram. (10 marks.)

(4) What is meant by modulation? Describe a method of modulating a typical low-power R.F. amplifier. (10 marks.)

(5) What are the relative advantages and disadvantages of a variable-frequency master oscillator over a crystal-controlled oscillator for use in an amateur transmitter? Describe a variable-frequency oscillator of good frequency-stability. (15 marks.)

(6) Describe, with the aid of a diagram, the circuit arrangement of a low-power crystal-controlled transmitter for the 58·5 to 60 Mc/s. frequency band. (15 marks.)

(7) Describe FOUR types of aerial commonly used for amateur transmission and how they may be coupled to the transmitter. What are their relative advantages and disadvantages? (10 marks.)

(8) Condition 8 of the Postmaster-General's licence to establish an amateur wireless station stipulates:—
   "Where the sending apparatus is not crystal-controlled there should be kept at the station . . . a reliable frequency meter of the piezo-electric crystal type or other type approved by the Postmaster-General, for measuring the frequency to an accuracy of not less than ±0·1 per cent."
   Describe an apparatus to meet the foregoing requirement. Illustrate your answer by a diagram and explain how the apparatus is used. (20 marks.)

Log Entries

We have been requested by the G.P.O. to advise all members holding an Amateur Licence that Condition 6 of the licence must be rigidly adhered to. This condition states that:—

"*A running record shall be kept in a book of approved type (not loose leaf) of all sending periods, showing the date and time of each period and the frequency and type of emission employed. No gaps shall be left between entries in the log. The record of sending periods shall in all cases be initialled at the time of recording by the authorised operator named in Condition 4.*"

The G.P.O. require that a record shall be kept of:—
   (*a*) Each CQ call transmitted.
   (*b*) Every call to a station whether in reply to a CQ or a QRZ.
   (*c*) The time a QSO begins and ends.

London (I.E.E.) Meeting

An attendance of 120 was recorded at the meeting held on Friday, November 14th last, at the Institution of Electrical Engineers, London, when Mr. E. Fielding of *Salford Electrical Instruments, Ltd.*, delivered a paper entitled "Quartz Crystals." The paper was well illustrated by a series of slides.

Contributors to the discussion included Messrs. Chapple (G6SC), Hammans (G2IG), Wardman (G5GQ), Alford (G2DX) and Clark (G6OT).

A vote of thanks to the lecturer was proposed by the President (Mr. S. K. Lewer, B.Sc.), who presided. Mr. Fielding's paper will appear in an early issue of *The Proceedings of the R.S.G.B.*

Following the lecture the first showing took place of the 1947 N.F.D. and D/F Field Day films.

Duplicated copies of these films are now being prepared and an announcement will be made as soon as they are available for loan.

B.E.R.U. Receiving Contest

The Contest Committee, with the approval of the Council, have decided to publish the claimed scores of the six U.K. members who took part in the 1947 B.E.R.U. Contest. These are as follows:—BRS15024 (1444), BRS2763 (1404), BRS1535 (1364), BRS6604 (1102), BRS12828 (1035), BRS250 (838).

The Council has declared Mr. Eric Trebilcock, BERS195, of Wynard, Tasmania, the only other entrant, to be the winner, with a score of 1281. Mr. Trebilcock will receive a minature of the B.E.R.U. receiving trophy. It will not be possible to send the actual trophy abroad.

The late Mr. Jack Wyllie, GM5YG.

Mrs. Wyllie and her son George wish to thank very sincerely the many members who extended sympathy to them on their recent bereavement.

Lectures

Appropos the letter published in our last issue from Mr. H. L. Overton, G4CY, the following members have offered to deliver lectures to local groups of members:

Mr. S. G. Button, A.M.Brit.I.R.E., G5JY, 81 Woodbridge Road, Guildford, Surrey (Guildford and District).
Mr. W. C. Holley, G5TN, 252 Locking Road, Weston-super-Mare, Soms.
Mr. W. N. Craig, G6JJ, 34 Blossom Way, Hillingdon, Middlesex.

Mr. Craig requests that he be given at least three weeks, notice and that the subject of any lecture he may deliver shall be mutually agreed between the T.R. (or A.R.) concerned and himself. Mr. Craig does not attach great importance to a large attendance. It is, he suggests, more pleasant to speak to a small keen audience than to one hundred volunteers—you, you and *you!*

R.C.M.F. Exhibition 1948

The Fifth Annual Private Exhibition of British Radio Television and Electronic Components and Test Gear will be held in the Great Room at Grosvenor House, Park Lane, London, W.1, from Tuesday, March 2, to Thursday, March 4, 1948.

The Exhibition is organised by the Radio Component Manufacturers' Federation and is promoted, as in former years, to acquaint Radio and Electronic Manufacturers and Engineers with the most recent advances in the design and development of British radio, television and electronic components and accessories, radio and television test gear and instruments, and in the materials employed in their manufacture.

The Exhibition will be open to visitors, by invitation only, from 10 a.m. to 6 p.m. daily during the period Tuesday, March 2 to Thursday, March 4 inclusive.

Eddystone 640 Receiver Essay Competition

How would you like to possess one of the new Eddystone 640 receivers—a receiver especially designed by amateurs for amateurs?

Stratton & Co. Ltd., of Birmingham, will present free of charge one of these receivers to the writer of the best article on one of the following three topics:—

(*i*) *How do you visualise the application of the new Microwave channels shortly to be allocated to radio amateurs?*
(*ii*) *It is evident that Band Planning will be essential if the most is to be made of the amateur bands. What proposals have you to make in this connection?*
(*iii*) *What are your views on the subject of the relative merits of British and American communications equipment? Articles on this subject should be written without prejudice. If a competitor considers American equipment better, he should say so and state his reasons.*

When judging the essays, points will be awarded not only for literary style but also for clarity of expression, force of argument and constructiveness.

Mr. Austin Forsyth, O.B.E. (G6FO), Mr. Geoffrey Parr, M.I.E.E., and Mr. John Clarricoats (G6CL) have consented to act as judges.

Competition rules can be obtained upon application to *Stratton & Co. Ltd.*, Alvechurch Road, Birmingham 31. Each entry must be accompanied by a 1/– postal order. Closing date January 31, 1948.

New Recording Developments

At a recent meeting of the Royal Society of Arts, Sir Ernest Fisk read a paper on "The Development of Sound Recording and Reproduction," in which he stressed the importance of transient pulses in achieving high fidelity reproduction. He revealed that for the first time in the history of Sound Science, frequencies up to 20,000 cycles per second were now being recorded.

Silent Keys

We record with deep regret the deaths of Mr. C. Vollrath, BRS6894, and Mr. W. W. Wallace (Jock), BRS1545, both of Hamsey Green, Upper Warlingham, Surrey. Mr. Vollrath was fatally injured as the result of a motor-cycle accident on Friday, 14th November. Mr. Wallace with whom the deceased lived was called upon to identify the body and having done so collapsed and died from heart failure whilst being driven home in a police car. Both were very keen members of the Society and of the Surrey Radio Contact Club (Croydon).

Mr. Vollrath was the current holder of the Ann Trophy presented each year to the B.R.S. member in South London for the best example of home constructed gear. Mr. Wallace served in the 1914–18 war and came through with his life but permanently disabled. In spite of his disability he was always willing to help those in need of assistance.

Our deepest sympathies are offered to the relatives of the victims of this double tragedy.

BRS3003

B.E.R.U. CONTEST, 1948

General Rules

1. The Event will be divided into three sections, namely :—(*a*) Senior (High Power) Transmitting Section ; (*b*) Junior (Low Power) Transmitting Section ; (*c*) Receiving Section. The three sections will be run concurrently.

2. The Contest is open to all British subjects living within the British Empire and British Mandated Territories and to British Occupational Forces operating properly authorised stations, who are fully paid-up members of either the R.S.G.B. or one of the British Empire Societies listed overleaf. All entrants agree to be bound by the Rules of the Contest.

3. Entrants who are not members of the R.S.G.B. must certify in the declaration overleaf that they were fully paid-up members of their local society at the time of the contest.

4. An entrant not located in one of the prescribed Prefix Zones shall be considered as being in the Prefix Zone nearest to his station.

5. Contacts with, or reports from, ships or unlicenced stations located in countries where licences are obtainable will not be permitted to count for points. The decision as to whether a station is to be classed as unlicenced will rest with the R.S.G.B. Contests Committee.

6. Only one person will be permitted to operate a specific station for the duration of the contest.

7. A trophy will be awarded to the fully paid-up member of the R.S.G.B. scoring the highest number of points in each section of the contest. Certificates of merit will be awarded to the first three stations in each section and also to the leading station in each Prefix Zone, providing at least three entries have been received from the zone in question. In addition a second certificate will be awarded to each zone provided ten or more entries are received from that zone.

8. The declaration at the foot of the Entry Form must be signed by the operator, who will be recorded as the competitor.

9. Entrants must provide their own log sheets which, together with the analysis sheet, must be legibly written or typed as set out overleaf. Incomplete entries will be disqualified.

10. All entries must be posted within seven days of the close of the contest. No entry will be accepted at R.S.G.B. Headquarters, New Ruskin House, Little Russell Street, London W.C.1, later than June 14, 1948.

11. The judging of entries will be carried out by the R.S.G.B. Contests Committee. The President's decision will be final in all cases of dispute.

12. No correspondence can be entered into regarding any decision made by the President or Council.

13. The contest will extend from 00.01 G.M.T., Saturday, April 3, 1948, to 23.59 G.M.T., Sunday, April 4, 1948, and from 00.01 G.M.T., Saturday, April 17, 1948, to 23.59 G.M.T., Sunday, April 18, 1948.

14. Contest operation during local hours of restrictions in the use of electricity for wireless which have been publicly announced is forbidden. The duration of any such restrictions will be recorded on the entry form.

Rules for the Transmitting Sections

1. Fifteen points will be scored for the first contact on a specific band with a British Empire station located in any Prefix Zone outside the competitor's own zone. Fourteen points will be scored for the second contact on the same band with the same zone, thirteen points for the third contact, and so on, to the fifteenth contact, which contact will score one point. All contacts with that particular zone on that band thereafter will count one point each. This scoring procedure will be repeated on each band to encourage multi-band operation.

2. Only one contact with a specific station may be made on each band during the contest.

3. The contest is open for two-way C.W. contacts only on any amateur frequency band, providing the input to the valve or valves delivering power to the aerial is not in excess of that specified on the competitor's licence and in no case more than 150 watts in the Senior (High Power) Section and 25 watts in the Junior (Low Power) Section, and providing the entrant has permission to operate his station on the band or bands in question.

4. The conditions laid down in the entrant's transmitting licence shall be observed.

5. A serial number consisting of six figures must be exchanged before points may be claimed. The serial number is made up of RST and three numerals denoting the number of the contact, the first contact being 001, and so on.

6. Entrants receiving consistent tone reports of less than T8 will be disqualified.

7. Specially appointed Band Monitoring Stations, under the auspices of the R.S.G.B., will be active during the contest. Any station reported off frequency by these checking stations will be disqualified without appeal.

Rules for the Receiving Section

1. One point will be scored for each British Empire C.W. station heard working another British Empire C.W. station, providing the station heard is located outside the competitor's Prefix Zone. An additional 50 points will be scored for each Prefix Zone heard on each band (*i.e.* 51 points will be scored for the first station heard in a particular zone and one point for each subsequent station heard in the same Prefix Zone on the same band). This scoring procedure will be repeated on each band to encourage multi-band reception.

2. Before a point can be claimed, the following information must be logged :—(*a*) Call of station heard ; (*b*) Call of station being worked ; (*c*) Entrant's report on the signals of the station heard (RST) ; (*d*) The Serial Number given by the station heard to the station being worked.

3. CQ and Test calls will not count for points.

4. The same station may only be logged once on each band during the two week-ends of the contest.

(Format of Entry Form and Prefix Zone Chart overleaf)

FORMAT OF THE B.E.R.U. ENTRY FORM

B.E.R.U. Contest, 1948.....Section

Name (Block Letters)..... **Callsign.....**

Address.....

Transmitter.....

Input Power to last valve.....

Receiver.....

Aerial Systems used.....

Date (1)	G.M.T. Contact Established (2)	Band Used Mc/s. (3)	Callsign of Station Worked (4)	SERIAL NUMBERS		Points Claimed (7)
				Sent (5)	Received (6)	
				....001 ....002 etc.		
			TOTAL			

DECLARATION :—

I hereby certify that my station was operated strictly in accordance with the rules and spirit of this Contest, and I agree that the decision of the President, R.S.G.B., shall be final in all cases of dispute.

Date..... *Signed.....*

If an entrant is a non-member of the R.S.G.B., he must sign the following additional Declaration :—

I hereby certify that at the time of the Contest I was a fully paid-up member of.....

Date..... *Signed.....*

* * *

Receiving Contest

The entry form for this contest should be prepared on the lines set out above with the following amendments :—

Column 2 : G.M.T. station heard.
Column 4 : Station heard.
Column 5 : Entrant's report on station heard.
Insert new Column : Station being worked.
Column 6 : Serial number given by station heard to station being worked.

Prefix Zone Chart and Specimen Score Analysis Sheet

Prefix Zone.	.....Mc/s.		.....Mc/s.		.....Mc/s.	
	Contacts	Points	Contacts	Points	Contacts	Points
D2, EI, G, GC, GD, GI, GM, GW						
J4, VS6						
MB9, SVO, XA						
MD1, 2, ZB1, 2						
MD3, 5, ST, VQ6 (MD4)						
MD6, VS9, VU7 (VS8) ..						
VE1						
VE2						
VE3, 4						
VE5, 6						
VE7, 8						
VK2, 3, 7						
VK4, 9						
VK5, 6, ZC2, 3						
VO1, 2, 3, 4, 5, 6 ..						
VP1, 5, 7, 9						
VP2, 3, 4, 6						
VP8						
VQ1, 3, 4, 5, ZD6 ..						
VQ2, ZE						
VQ8, 9						
VR1, 2, 3, 4, 5, 6, ZK1, 2, ZM						
VS1, 2, 4, 5						
VS7						
VU2						
VU5, XZ2						
ZC4 (MD7), ZC6 ..						
ZD1, 2, 3, 4, 8, 9 ..						
ZL1, 2, 3, 4						
ZS1, 2, 3						
ZS4, 5, 6						
TOTALS						

NOTE.—Some of the above prefixes may be out of date at the time of the Contest.

MAKE SURE YOU HAVE READ THE RULES CAREFULLY AND DO NOT FORGET TO SIGN THE DECLARATION AT THE FOOT OF THE FORM.

SUGGESTIONS FOR FUTURE CONTESTS ARE INVITED.

Empire Societies

Canadian Amateur Radio Operators' Association.
Canadian Section A.R.R.L.
Hong Kong Amateur Radio Transmitters' Society.
Irish Radio Transmitters' Society.
Amateur Radio Club of Jamaica.
Newfoundland Amateur Radio Association.
New Zealand Association of Radio Transmitters.
Radio Club of Ceylon and South India.
Radio Society of East Africa.
South African Radio Relay League.
Wireless Institute of Australia.

FORTHCOMING EVENTS

REGION 1.

Bury.—Jan. 5, 7.30 p.m., Athaneum.
Manchester.—Jan. 5, 7.30 p.m., College of Technology.

REGION 2.

Barnsley.—Jan. 9, 23, King George Hotel, Peel Street.
Bradford (Amateur Radio Society).—Dec. 23, Jan. 20, 7.30 p.m., Cambridge House, 66 Little Horton Lane. Jan. 6, 6.15 p.m., Telephone Exchange, Manchester Road.
Bradford (Short Wave Club).—Mondays, 7 p.m., Temperance Rooms, Harewood Street.
Catterick.—Tuesdays, 7 p.m., S.T.C., H.Q. Block, Vimy Lines.
Doncaster.—Wednesdays, 7.30 p.m., 73 Hexthorpe Road.
Halifax.—Dec. 29, Jan. 12, 7.30 p.m., Toc H Rooms, 32 Clare Road.
Harrogate.—Wednesdays, 7.30 p.m., rear of 31 Park Parade.
Huddersfield.—Dec. 31, Jan. 14, 7.30 p.m., Plough Hotel, Westgate.
Hull.—Dec. 31, 7.30 p.m., Imperial Hotel, Paragon Street.
Leeds.—Fridays, 7 p.m., Swathmore Settlement, Woodhouse Square.
Middlesbrough.—Jan. 18, 7.30 p.m., Cleveland Scientific and Technical Institute, Corporation Road.
Newcastle.—8 p.m., British Legion Rooms, 1 Jesmond Road.
Sheffield.—Dec. 24, 8 p.m., "Dog and Partridge," Trippet Lane. Jan. 14, 8 p.m., Albreda Works, Lydgate Lane.
South Shields.—Fridays, 7 p.m., St. Paul's School, Westoe.
Sunderland.—Dec. 24, Jan. 14, 7.30 p.m., 16 North Bridge Street.
York.—Wednesdays, 8 p.m., 29 Victor Street.

REGION 5.

Cambridge.—Dec. 19, 7.30 p.m., special Film Show, Chesterton School, Gilbert Road. Ladies specially invited.
Chelmsford.—Jan. 6, 7.30 p.m., 184 Moulsham Street.

REGION 7.

London.—Jan. 9, 6.30 p.m., Institution of Electrical Engineers, Savoy Place. Tea at 5.30. Lecture by Mr. J. N. Walker, G5JU, on "The Design and Construction of Amateur Transmitters."

REGION 7 (Continued)

Barnet.—Jan. 17, 7.30 p.m., Millicent Cafe, Lytton Road, New Barnet.
Brentwood.—Dec. 17, 7 p.m., "Montazah," St. Charles Road.
Edgware.—Dec. 17, Jan. 7, 14, 21, 8 p.m., Orchard Cafe, Broadway, Mill Hill.
Croydon.—Jan. 13, 7.30 p.m., "Blacksmith's Arms," South End.
Enfield.—Dec. 21, Jan. 18, 3 p.m., A & B Cafe, Southbury Road (junction with Ladysmith Road).
Hampstead.—Dec. 22, 8 p.m., The Eton Hotel, Adelaide Road, N.W. 3 (Chalk Farm Station).
Ruislip.—Dec. 18, Jan. 1, 8, 15, 22, 7.30 p.m., Oddfellows Hall, Waxwell Lane, Pinner.
Slough.—Dec. 18, Jan. 15, 7.30 p.m., Congregational Church Hall, Church Street.
Southgate.—Jan. 2, 7.30 p.m., Merryhills Hotel (near Oakwood Station).
St. Albans.—Dec. 23, Jan. 20, 8 p.m., "The Beehive," London Road.
Welwyn Garden City.—Jan. 6, 8 p.m., Council Offices.

REGION 8.

Eastbourne.—Jan. 2, 7.30 p.m., Friends Meeting House, Wish Road.
Southampton.—Jan. 3, 7.30 p.m., 22 Anglesea Road, Shirley.
Worthing.—Jan. 1, 7.30 p.m., Olivers Cafe, Southfarm Road.

REGION 9.

Bristol.—Dec. 19, Jan. 16, 7 p.m., Keen's Cafe, Park Row.

REGION 10.

Cardiff.—Date and place not yet arranged. Telephone Cardiff 180 or Llandaff 407.

REGION 11.

Rhyl.—Dec. 21, 3 p.m., Crown Hotel. "Question Box and Mystery Exchange of Parcels."

REGION 14.

Glasgow.—Dec. 24, 7 p.m., Institute of Engineers and Shipbuilders, 39 Elmbank Crescent.
Stirling (including Falkirk, Alloa and Larbert).—Jan. 8, 7.30 p.m., Plough Hotel, Stenhousemuir.

EXCHANGE AND MART SECTION

Due to paper restrictions advertisements are only accepted "for insertion when space is available." No advertisement must exceed 50 words. Rates: Members Private Advertisements 2d. per word, minimum charge 3/-. Trade, 6d. per word, minimum charge 9/-. Use of Box number 1/6 extra. Send copy and payment to Parrs Advertising Ltd., 121 Kingsway, London, W.C.2.

ABSOLUTE Bargains. Must sell surplus: valves, meters, RX's, coils, etc. Too numerous to list. Send requirements.—S.A.E., G3CHL, 87 Abbey Road, Smethwick, Staffs. [*664*

ALL new unused, Valve STC 4304CA, 75/0 Mullard T205–20 equivalent T25. 25/–; QCC 100 kc crystal 30/–.—ANDREW, c/o BM/BCHH, London, W.C.1. [*648*

ALTERNATORS 1½Kw £25. Oscillators G33 Admiralty new 15 Kc/s. to 24 Mc/s. £10. Polished Beech cabinet power supplies weight 65-lbs., 1,000v. GU50 with DLS10, £5. 600v., £5. R1224A 1–9 Mc/s. receivers, 5 valve, tuned RF Muirhead vernier dials, £7 10s. S.A.E. bargain lists.—Amateur Radio Service, G6HP, Canning Street, Burnley. [*654*

AMATEUR Clearance Surplus Gear. Brand new American Navy RV–19 receiver, 6 valves, 21–1600 metres. Het. Osc. nine plug-in HRO type coils, micro vernier tuning. Ready to switch on. Operates off standard power pack. Full details. First £5 5s. secures. EF50's in ceramic holders 5/– each. Carriage free.—Box 645, PARRS, 121 Kingsway, London, W.C.2. [*645*

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