

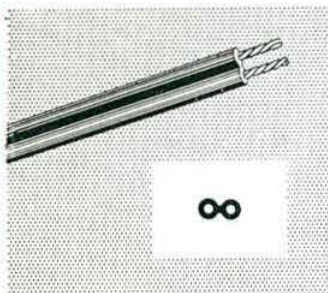
# R.S.G.B.



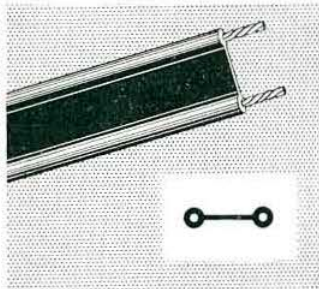
# BULLETIN

## TELCON

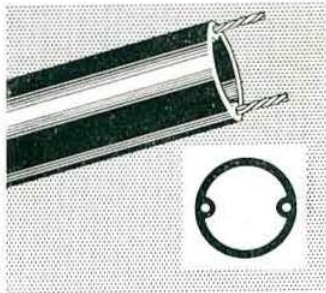
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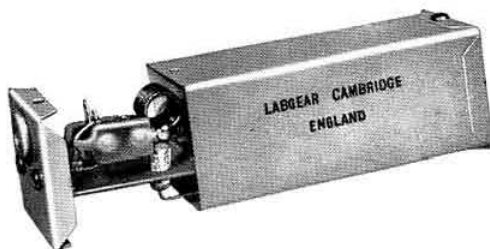
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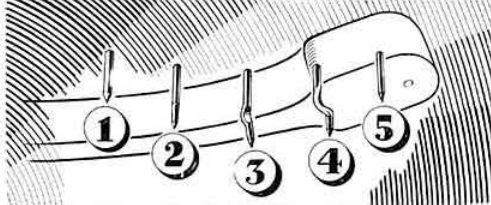
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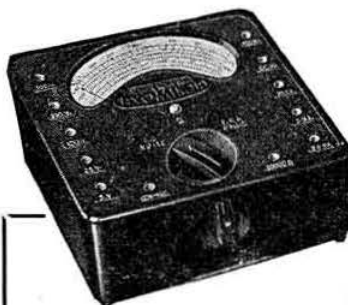
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0-5 volts	0-25 "
0-25 "	0-100 "
0-100 "	0-250 "
0-250 "	0-500 "
0-500 "	
<b>D.C. CURRENT</b>	<b>RESISTANCE</b>
0-2.5 milliamps	0-20,000 ohms
0-5 "	0-100,000 "
0-25 "	0-500,000 "
0-100 "	0-2 megohms
0-500 "	0-5 "
	0-10 "

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A small but highly accurate instrument for measuring A.C. and D.C. voltage, D.C. current, and also resistance. It provides 22 ranges of readings on a 3-inch scale, the required range being selected by plugging the leads supplied into appropriately marked sockets. An accurate moving-coil movement is employed, and the total resistance of the meter is 200,000 ohms.

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0-30 "
0-120 "
<b>VOLTAGE</b>
0-6 volts.
0-12 "
0-60 "
0-120 "
0-300 "
0-600 "
<b>RESISTANCE</b>
0-10,000 ohms
0-60,000 "
0-600,000 "
0-3 megohms



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S.W.G.	inch	ENAMELLED		TINNED		COTTON COVERED		SILK COVERED	
		2 ozs.	4 ozs.	2 ozs.	4 ozs.	2 ozs.	4 ozs.	2 ozs.	4 ozs.
16	.064	1/4	2/-	1/4	2/-	1/4	2/-	1/4	2/-
17	.056	1/4	2/1	1/4	2/1	1/4	2/1	1/4	2/1
18	.048	1/4	2/2	1/4	2/2	1/4	2/2	1/4	2/2
19	.040	1/4	2/3	1/4	2/3	1/4	2/3	1/4	2/3
20	.036	1/5	2/4	1/5	2/4	1/5	2/4	1/5	2/4
21	.032	1/5	2/5	1/5	2/5	1/5	2/5	1/5	2/5
22	.028	1/6	2/6	1/6	2/6	1/6	2/6	1/6	2/6
23	.024	1/7	2/7	1/7	2/7	1/7	2/7	1/7	2/7
24	.022	1/7	2/8	1/7	2/8	1/7	2/8	1/7	2/8
25	.020	1/8	2/9	1/8	2/9	1/8	2/9	1/8	2/9
26	.018	1/8	2/10	1/8	2/10	1/8	2/10	1/8	2/10
27	.0164	1/9	2/11	1/9	2/11	1/9	2/11	1/9	2/11
28	.0148	1/9	3/-	1/9	3/-	1/9	3/-	1/9	3/-
29	.0136	1/10	3/1	1/10	3/1	1/10	3/1	1/10	3/1
30	.0124	1/10	3/2	1/10	3/2	1/10	3/2	1/10	3/2
31	.0116	1/11	3/3	1/11	3/3	1/11	3/3	1/11	3/3
32	.0108	1/11	3/4	1/11	3/4	1/11	3/4	1/11	3/4
33	.010	2/-	3/5	2/2	3/10	2/3	3/11	2/10	5/2
34	.0092	2/-	3/6	2/3	4/-	2/4	4/2	2/11	5/4
35	.0084	2/1	3/7	2/4	4/2	2/6	4/5	3/1	5/8
36	.0076	2/1	3/8	2/6	4/5	2/7	4/8	3/3	6/-
37	.0068	2/2	3/10	2/7	4/8	2/11	5/6	3/5	6/4
38	.006	2/3	4/-	2/9	4/11	3/4	6/2	3/7	6/8
39	.0052	2/4	4/2	2/10	5/2	—	—	3/10	7/2
40	.0048	2/5	4/4	3/-	5/6	4/7	8/2	4/1	7/8
41	.0044	1/6	per oz.	1/9	per oz.	—	—	2/3	per oz.
42	.004	1/9	—	1/9	—	—	—	2/6	—
43	.0036	2/3	—	2/6	—	—	—	3/-	—
44	.0032	3/-	—	—	—	—	—	4/-	—
45	.0028	4/-	—	—	—	—	—	5/6	—
46	.0024	5/-	—	5/-	—	—	—	7/6	—
47	.002	7/6	—	—	—	—	—	12/6	—

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17	1/6	1/6
18	1/6	1/6
19	1/6	1/6
20	1/6	1/6
21	1/6	1/6
22	1/6	1/8
23	1/6	1/10
24	1/8	2/-
25	1/10	2/2
26	2/-	2/4
27	2/-	2/4
28	2/-	2/6
29	2/2	2/6
30	2/2	2/6
31	2/3	2/8
32	2/3	2/9
33	2/4	3/-
34	2/6	3/3
35	2/8	3/6
36	2/9	3/9
37	3/-	4/3
38	3/3	—
39	3/6	—
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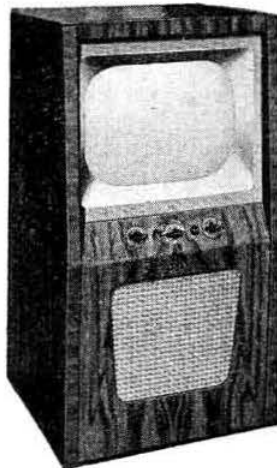
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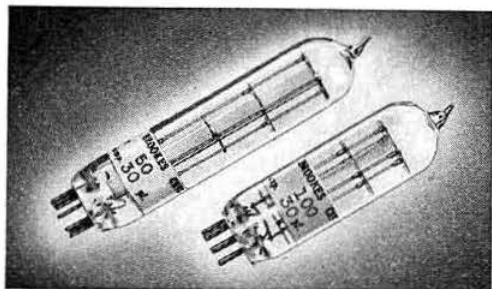
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# R.S.G.B. BULLETIN



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R.S.G.B. BULLETIN, September, 1953.

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## R.S.G.B. BULLETIN

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# Tracking 2000g at 10 grammes maximum stylus pressure



Pick-up tracing capabilities now have to be of a substantially higher order than those for 78 r.p.m. records, and are likely to become even more critical. Cosmocord, with the very helpful co-operation of the Decca Record Company, have recently made a detailed examination into the optimum tracking requirements that could arise in modern types of microgroove records. This was done in order to establish a basis for the design of pick-ups that would not only satisfy the requirements of all records at present available to the public, but if possible anticipate future developments within the limits as set out in the recently published British Standard Specification (B.S.1928:1953).

## THREE FACTORS

The three important factors that had to be considered by Cosmocord in designing such a pick-up were minimum groove width, maximum lateral displacement and maximum stylus tip acceleration.

The minimum groove width as laid down by the British Standard Specification is .002 in. The conditions existing in a record giving up to 30 minutes playing time per 12-in. side are well demonstrated in the accompanying scale drawings. For simplicity's sake, the groove angle has been shown as 90° and the radius at the bottom of the groove has been left out, as at .0003 in. maximum it has no effect. Three pick-up stylus radii are shown, the nominal .001 in. radius (Fig. 1) and its upper and lower limits of .0012 in. and .0008 in. (Figs. 2 and 3 respectively) according to British Standard Specification. It can be seen that the .001 in. radius has .0004 in. wall above its point

of contact, whilst the .0012 in. radius has no more than .0002 in. This does not take into account the pinch effect which can reduce the margin by .0002 in. at 5000 c/s.

## PRACTICAL CONSIDERATIONS

In order to arrive at maximum possible displacement, some assumptions have to be made that are dictated by practical considerations. Working on the basis of 200 grooves per inch, the maximum possible displacement ( $d$ ) is .003 in. At a frequency of 40 c/s this displacement corresponds approximately to a maximum velocity of 2 cm/sec. ( $v=2\pi fd$ ). Accepting the recording characteristics of the Decca Long Playing test record No. LXT 2695 as typical for commercially produced long playing records, the maximum velocity and corresponding acceleration at 10,000 c/s can be calculated.

According to the record specification the recording pre-emphasis at 10,000 c/s relative to 40 c/s is +24.4 db and this gives a velocity of 31.6 cm/sec and a corresponding displacement of .0002 in. ( $e=v/2\pi f$ ). It further follows that expressed in gravitational units the acceleration at 10,000 c/s may be as high as 2000g ( $g=ef^2/10$ , where  $e$  = displacement = .0002 in. and  $f$  = 10,000 c/s).

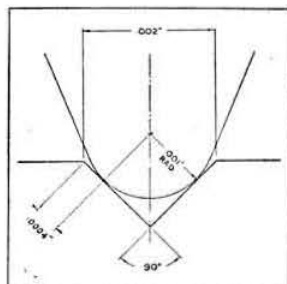


Fig. 1

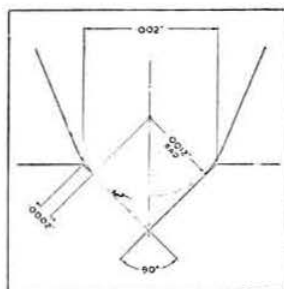


Fig. 2

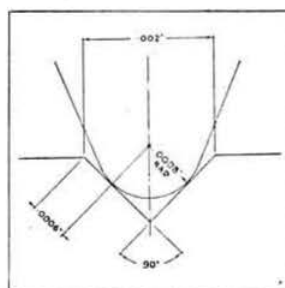


Fig. 3

## WHAT OF THE FUTURE?

This examination brings to light conditions that appear to be incredible at first sight. But it may be only a question of time before they appear on commercially produced records. Even now there are a few odd records on the market which come very close to these limiting conditions.

Acos "Hi-g" series of pick-up cartridges already meet, here and now, any likely future development of gramophone records within the B.S.1928:1953 specification.



*always well ahead*

ACOS devices are protected by patents, patent applications and registered designs in Great Britain and abroad.

**COSMOCORD LTD · ENFIELD · MIDDLESEX**

# Current



## Comment...

### Special General Meeting

WITH this issue of the BULLETIN there comes to all Home Corporate Members formal notice convening a Special General Meeting, once again to deal with the subscription rates. Apart from dropping the idea of an Entrance Fee, the Special Resolution still asks for the Membership to give power to the Council to levy a subscription of 30/- OR SUCH LESSER SUMS AS THE COUNCIL MAY DECIDE FROM TIME TO TIME.

It is evident to everyone that subscriptions must be increased. About that there has been no argument; in fact 25/- per annum has been the figure which many members thought would be acceptable. With this in mind, the Council has very carefully considered the Society's finances and a number of economies have been effected, but we are now down to rock-bottom, if the services to members are to be maintained, to say nothing of their being improved. From an analysis of the figures, it has become clear that for the next financial year, at any rate, the Home Corporate subscription must be 27/6.

This can be achieved if the Special Resolution goes through this time, with the necessary majority. Any further delay will seriously prejudice the position, for the Society is now losing money from its irreplaceable reserves to the tune of some £1,500 per annum. It should be mentioned, especially for the benefit of the newer member, that these reserves were due solely to the phenomenal sales during the war of the R.S.G.B. *Amateur Radio Handbook* (prepared voluntarily by a small group of old-timers).

The Council has presented all the figures and feels that it is entitled to expect the confidence of the membership.

Because renewals of subscription go on throughout the year, even if the subscription is increased, say, from January 1st, 1954, or even at once, more than a year must elapse before the full benefit can be apparent, so whatever happens, the Society must go on losing money for some time to come.

However, no effort will be spared to see that good value is given for the extra income from subscriptions and if at some future time, the subscription can be reduced to 25/- or even lower, the terms of the Special Resolution give the Council power to make a reduction.

The present R.S.G.B. subscription is one of, if not, the lowest, National Radio Society subscrip-

tions in the world. If we are to progress, then we must be realistic and match 1953 expenses with a 1953 income.

### Proxy Voting

For the guidance of Corporate members, here are a few notes on the subject of proxy votes.

In brief, any Corporate Member unable to attend the Special General Meeting may appoint any person to act as his representative. This person is called a PROXY. The member appointing such a proxy may instruct him in three ways:—

1. To vote FOR the resolution.
2. To vote AGAINST the resolution.
3. Give him a free hand to vote for or against as he may decide after hearing the arguments at the meeting. This is called an OPEN proxy.

An open proxy conveys absolute discretion on the holder thereof to vote as he thinks the person who has appointed him would vote and has the advantage that he may vote on any motion which may come before the meeting. Nos. 1 and 2 can be used only in the voting on the Special Resolution itself.

A member wishing to appoint a proxy may nominate any person, even a non-member of the Society, provided that person attends the meeting. For this reason, and as it saves a great deal of time when the vote is taken, the President, General Secretary or any member of the Council can act as proxy and of course are legally bound to vote in accordance with the instructions given by the member who appoints them. Anyone who wishes to make sure that his vote is cast may appoint a second proxy, who will act if the first proxy is not present at the meeting and a third proxy if neither of the first two puts in an appearance. Provision for this is made on the proxy form included herein.

It is important to ensure that all proxy forms arrive at the Society's Headquarters before the legally appointed closing date, as none can be considered which arrives late.

Above all, make sure that your voice is heard, either in person or by proxy.

Leslie Cooper,

President.

## The Society's Finances

### Analysis and Comments: Proposed Increase of Subscription to 27'6d.

THE following notes are based on a Memorandum which the writer prepared for the Special Meeting of the Council on August 11, 1953, showing the state of the Society's finances. A provisional Income and Expenditure account for the year ended June 30, 1953, was submitted. It was prepared from the information available, outstanding expenses in some instances being estimated. The account was *not* audited, but it is felt that the figures in the audited accounts will not differ materially from those given in the provisional accounts, and a summary is reproduced below.

#### Provisional Income and Expenditure Account for year ended 30th June, 1953

Income	£
Subscriptions ... ..	8,890
Net Income from Sale of Publications ... ..	595
Investment Income (Gross) ... ..	425
Amateur Radio Exhibition, 1952 ... ..	90
	<hr/>
	£10,000
<b>Expenditure</b>	
Administrative Expenses including Salaries, Rent, Rates, Lighting, Heating, Telephone, Postage, Printing, Stationery, etc. ... ..	5,270
Travelling and Meetings ... ..	1,265
BULLETIN ... ..	4,360
QSL Bureau ... ..	215
Awards, Trophies, Certificates and Badges ... ..	140
Miscellaneous Expenses ... ..	400
	<hr/>
	£11,650
<b>Excess of Expenditure over Income</b>	<b>£1,650</b>

The total expenditure shown is substantially as had been forecast earlier in the year. The following points deserve members' consideration.

(1). The Society is committed to an additional annual expenditure of at least £336 for the three Funds set up by I.A.R.U. Region I.

(2). The Society is now very short of working capital and it will be necessary to realise investments in the near future with a consequent reduction in investment income.

(3). There is no working capital to finance the publication of either a handbook or any technical booklets so that this former source of income to the Society is no longer available.

(4). The cost of the BULLETIN has been kept down by restricting the size; in view of the reduction in the paper charge it may be possible to increase the size during 1953/1954 without an increase of expenditure.

(5). Travelling of Council members in the second half of the year (Jan.-June 1953) was restricted.

(6). The financial benefit received from staff changes is shown in the reduction of the total salary charge.

(7). The travelling expenses of six zonal representatives must be considered when the revised Articles become effective.

(8). No provision is at present being made for the expenditure necessary to send Representatives to Overseas Conferences.

The annual expenditure which must be covered by subscriptions can be estimated as £11,000 (i.e. £11,650 less £650 for miscellaneous income), together with expenditure that will be incurred as indicated in 1, 5, 7 and 8. Because this expenditure is not covered by income, the subscription must obviously be raised.

It must be remembered, however, that an increase in subscription rates will be effective for only half the first complete year in which it is applied, and as it appears probable that increased rates will not come into force until the end of 1953, the Subscription Income for 1953/1954 will not be more than £1,000 greater than for 1952/1953. This means that the excess of expenditure over income for 1953/1954 will be at least £1,350, estimated as follows:

	£
Net Expenditure 1953/1954 say (as for 1952/1953) ... ..	11,000
Add I.A.R.U. Contribution say ... ..	350
	<hr/>
	11,350
Less Subscription Income 1953/1954 (as for 1952/1953) ... ..	9,000
Possible Increase ... ..	1,000
	<hr/>
Deficiency 1953/1954 ... ..	£1,350

Looking ahead, however, the Council at its August 11 meeting took into account additional causes of possible expenditure and the amount to be recovered by Subscription Income has been summarised as follows:

Annual Expenditure as for 1952/1953	£	Equivalent to a Subscription from each Corporate member of s. d.
Administrative ... ..	5,270	11 9
Travelling ... ..	1,265	2 10
BULLETIN ... ..	4,360	9 8
QSL Bureau ... ..	215	6
Awards, etc. ... ..	140	4
Miscellaneous Expenses ... ..	400	11
	<hr/>	
	11,650	26 0
Less Miscellaneous Income ... ..	650	1 5
	<hr/>	
	11,000	24 7
I.A.R.U. Contributions ... ..	350	9
Increased BULLETIN ... ..	150	4
Travelling Expenses of Council Members ... ..	50	1
Increased Salaries (consider pension contribution for Assistant Editor)	200	5
Zonal Representatives ... ..	500	1 1
Overseas Conferences ... ..	100	3
Recovery of past losses ... ..	400	10
Proposed Year Book ... ..	500	1 1



Other possible expenses (e.g., legal costs incurred in "Test" Actions, Radio Exhibitions, Accommodation for increased Council) ...	250	7
	13,500	30 0
Deduct Subscriptions from Associates and Overseas Members (say) ...	1,700	3 9
	£11,800	26 3

The Council considered these figures and agreed that the balance of £11,800 could be recovered by

way of an annual subscription from each of the 9,000 Home Corporate Members of 27s. 6d. The proposed Associate subscription of 15s. and Overseas Corporate Member subscription of 21s. has been taken into account by deducting the sum of £1,700 from the total expenditure.

Finally, it only remains for the writer to say that in considering the above figures Members must bear in mind the following points:

(1). Expenditure—the figures have been based on the present level of prices and no allowances have been made for an increase in expenditure due to a rise in cost of living.

(2). Income—a possible decrease of 5 per cent. in Membership has been allowed: it is an arbitrary figure.

## Society News

### Norman Keith Adams Prize and Bevan Swift Memorial Premium

**A**CTING on the advice of the Technical Committee, the Council has decided to award the Norman Keith Adams Prize for the current year to Mr. Paul Sollom, B.Sc., A.C.G.I. (G3BGL) for his original paper entitled "Skybeams, Moonbeams and Howitzers" published in the July and August, 1952, issues of the BULLETIN.

Also on the advice of the Technical Committee the Council has decided to award the Bevan Swift Memorial Premium for the current year to Mr. D. Clift, G3BAK, for his meritorious paper entitled "Amateur Microwave Experiments" published in the March, April and May, 1953, issues of the BULLETIN.

The presentations will be made at the Annual General Meeting in December.

### S.S.B. Conventionette

**T**HE first Conventionette for single sideband enthusiasts to be held in this country, will take place in London during the afternoon of Saturday, November 28, 1953, and will coincide with the last day of the Seventh Annual R.S.G.B. Amateur Radio Exhibition.

The Conventionette will be open to all who are interested in single sideband operation, and will not be confined to transmitting amateurs.

As the organisers must have some idea of the likely attendance, those who intend to support the function are asked to notify Mr. H. F. Knott, G3CU, 5 Kevington Drive, St. Pauls Cray, Orpington, Kent, by not later than September 30, 1953. Full details of the final arrangements will be circulated later to those who promise support.

### Affiliated Societies

**T**HE following are additions to the list of Affiliated Societies published in the July, 1953, issue of the BULLETIN:

**Ariel Radio Group (B.B.C. Club)**, c/o W. J. P. Hayes, B.B.C., Bush House, Aldwych, W.C.2.

**Dorking & District Radio Society**, c/o J. Greenwell, 7 Sondes Place Drive, Dorking, Surrey.

**Lothians Radio Society**, c/o I. Mackenzie, 41 Easter Drylaw Drive, Edinburgh 4, Scotland.

**Midland Amateur Radio Society**, c/o D. Hann, 144 Hill Village Road, Four Oaks, Sutton Coldfield.

### Illustrated Lecture

#### "RADIO IN NEW ZEALAND"

By

Ronald J. Coakley, ZL2RC  
(Late Principal of Radio Division, G.P.O.,  
Wellington, New Zealand)

at the

Institution of Electrical Engineers,  
Savoy Place, Victoria Embankment,  
London, W.C.1.

Friday, September 25, 1953.

All Members cordially invited.

Buffet Tea from 5.30 p.m.

Lecture commences 6.30 p.m.

### C.C.I.R. VIIIth Reunion

**T**HE VIIIth Reunion of the C.C.I.R. (International Radio Consultative Committee) was formally opened by H.M. Postmaster-General (Earl de la Warr) at Church House, Westminster, on Thursday, September 3, 1953. About 40 administrations and several international organisations are represented at the Conference which is expected to last for about one month. The Chairman is Mr. H. Faulkner (Deputy Engineer-in-Chief of the Post Office).

The International Amateur Radio Union is represented at the Conference by the General Secretary of the R.S.G.B.

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

### Third Edition

A fully revised edition of the R.S.G.B. Amateur Radio Call Book is now in course of active preparation.

Changes of address and details of new calls should be sent immediately to the Call Book Editor:

John Tyndall (G2QI),  
174 The Drive,  
Ilford, Essex.

Last day for copy: September 30, 1953.

# High Power on Five Bands

A High Efficiency, Band Switched, TVI-Proof Transmitter with Unusual Features

by NORMAN SHIRES, A.M.I.P.R.E. (G3BTM)\*

The search for a transmitter design which would permit operation at full power during TV hours in an area of low signal strength led the author to adopt some unorthodox circuit arrangements. In this article, these ideas are described in detail.

IN designing this equipment, several important objects were kept in mind. Transmitters employing conventional circuits completely blanketed nearby TV receivers and seriously affected others within 100 ft. unless elaborate filters were carefully installed and tuned. It was necessary, therefore, to build a transmitter specifically arranged to overcome these difficulties. It was to be capable of a power input of 150 W on both 'phone and c.w. on all bands from 3.5 to 28 Mc/s.

It is generally recognised in amateur circles that harmonic suppression is most readily achieved by good screening and by using low-power frequency multipliers followed by high gain final stages arranged to provide a low impedance shunt path for any high order harmonics generated. The choice, therefore, lay between an 813 or parallel 807s as the p.a. It was decided that all parts to be screened should be on one chassis in order to simplify construction.

## Circuit Arrangement

The circuit finally evolved is shown in Fig. 1. V1 is the driver stage, V2 the p.a., V3 a clamper

valve to protect V2, V4 a voltage regulator and V5 a diode used for monitoring.

Approximately one watt of r.f. power is fed via 80 ohm co-axial cable from the low-level exciter to the grid circuit of V1. This valve has no cathode bias resistor and derives its h.t. from R5 so that it assists the clamper valve (V3) when drive is removed. Should the clamper valve fail, V1 would prevent serious damage to the final amplifier valve. The anode band-switching is unusual in that C11 effectively earths to r.f. the point on the coil to which it is connected by SW3. The unused part of the coil is therefore cold to r.f. The tuning condenser is C8.

Initially, a pi-network tank circuit was considered for use in the final stage but owing to losses due to the shorted turns within the r.f. loop and the difficulty of designing an r.f. choke which remains "cold" and of high impedance at all frequencies, an alternative was sought. The arrangement shown was therefore adopted and has proved completely successful. No r.f. choke is required and the unused parts of the coil are free of r.f. The tuned circuit is formed from the anode of V2 through L3 to earth via C2 which has a low impedance at r.f. C3 is the tuning condenser which must have sufficient spacing to withstand the modulated h.t. and r.f. voltages, as its junction with C4 is at earth potential to d.c. via the aerial coupling link. C4 is adjusted for maximum output with minimum feed as in the usual pi-coupler circuit.

\* 118 Manor Square, Dagenham, Essex.

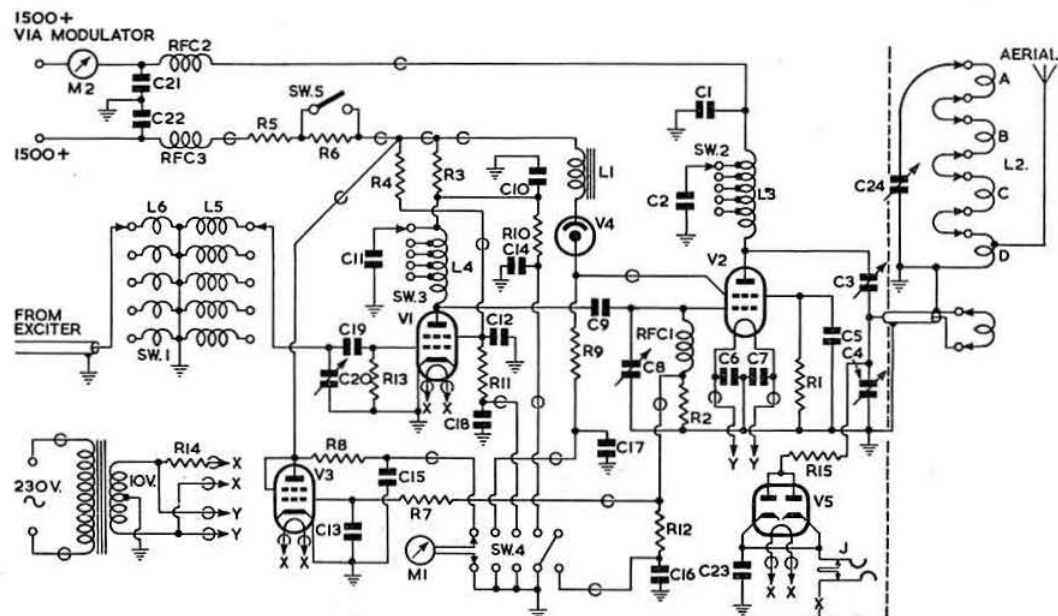


Fig. 1.—Circuit diagram of the band-switched 150 Watts transmitter. Screened leads should be used wherever indicated.

The grid circuit of V2 is conventional for a clamp controlled amplifier with the exception of the decoupling provided by C13 and R7 for the grid of the clamp valve V3. Connections are made by screened leads to prevent r.f. reaching the grid.

The screen grid of V2 is connected to h.t. via L1 (a 10 H choke of good insulation) and a VR150/30 (V4). The choke—the impedance of which must be high at audio frequencies compared with the screen grid d.c. impedance—is used so that modulation of the anode supply only, produces both anode and screen modulation, the relative amplitudes being automatically adjusted. The secondary of the modulation transformer should be adjusted to match 12,000 ohms.

The action of V4 is two-fold. When drive is removed and the clamp valve is drawing full current, the residual potential at its anode is insufficient to maintain ionisation in the regulator valve, which ceases to conduct, so removing the potential from the screen of V2. The final amplifier is, therefore, practically cut-off. R1 prevents random variations of voltage when isolated by the regulator valve. With an h.t. voltage of 1,550 the anode current under these conditions is about 10 mA. The second and most important effect is that the telegraphy waveform is shaped in the following manner. During the finite time required for the drive to build-up, the keyed and subsequent stages generate transients. The final amplifier is, however, cut-off by lack of screen voltage until the drive is sufficient to raise the potential of the clamp valve above the striking voltage of V4. Those transients which normally appear as clicks are therefore suppressed. Rapid growth of screen current is prevented by L1 so that the leading edge of the signal is rounded. Similarly, the decay of drive is also masked because V4 ceases to conduct a short time before the grid voltage on V1 falls to a low value. It is at this point that clamp controlled amplifiers often become momentarily unstable. At its worst, this effect manifests itself as a slight rise in anode current of short duration on lifting the key, so producing an unmusical "tail" to the signal. Keying is in the v.f.o. output stage and with 150 W input on 14 Mc/s the c.w. signal is perfectly clean and free from clicks.

A somewhat unusual feature is that with the exception of the anode feed to V2, metering is accomplished by voltage measurements. This system enables meter circuits to be kept free from r.f. and permits switching to be simplified. In addition, no shunts have to be made, but the various currents should be plotted initially against the indicated voltages. When using this method,

all tuning adjustments are made for maximum deflection on the appropriate meter scale.

The purpose of SW5, which is mounted on an insulated bush, is to permit low power operation.

### Monitoring Facilities

Monitoring is provided by the diode V5 which rectifies a small part of the output power; it is relatively insensitive to changes of frequency. With 150 W input 2-3 mA d.c. is available and a 0-5 mA meter inserted at "X" (Fig. 1) will serve as a remote indication of transmitter output, if required.

### Aerial Tuning Unit

The aerial tuning unit which is mounted on a separate 19 in. x 6 in. panel is fed via 80 ohm co-axial cable from the junction of C3 and C4. A low-pass filter may be inserted if required. The aerial coil L2 consists of four individual coils on one former, so terminated in sockets that each can be connected or isolated as desired. It is emphasised that the unused sections of the coil should be isolated from each other to prevent unwanted potentials appearing across them. The aerial tuning condenser (C22) is fitted with a flying lead to enable connection to be made to any part of the coil. Coupling to the co-axial line is achieved by plug-in links, no satisfactory method of switching having been found. The number of turns in each link coil is as follows: 28/21 Mc/s—1; 14 Mc/s—2; 7 Mc/s—3; and 3.5 Mc/s—4.

### Construction

The apparatus is accommodated on a 15 in. x 10 in. chassis with a standard 19 in. x 10 in. panel and enclosed in an aluminium box 16½ in. x 12 in. x 9½ in. Layout is not critical but should be arranged to give the shortest possible r.f. leads. The arrangement used in the original transmitter is shown in Fig. 2. Screened leads must be used where indicated on the circuit diagram. The base for the 813 should be sunk one inch below the chassis and the base supporting ring earthed.

Feed-through condensers for h.t., one for the anode of V2, the other for V1, and the screen of V2 can be made quite easily as follows: half inch holes are cut in the wall of the screening box and four mica discs 2 in. in diameter (approx. 5 thous. thick) are made. Metal plates 1½ in. diameter are then placed over each mica disc and bolted up with 4 B.A. screws through the holes. This arrangement provides sufficient capacity to by-pass the h.t. lines to earth.

The grid circuit of V1 is in the form of a turret,

Components List for Fig. 1

C1, 2	500 $\mu$ F	L2 (b)	7 turns	R6	20,000 ohms, 50 W
C3	200 $\mu$ F (see text)	L2 (c)	2 turns	R7	47,000 ohms, ½ W
C4	1,000 $\mu$ F (500 $\mu$ F twin - gang receiver type with sections in parallel)	L2 (d)	3 turns	R13	20,000 ohms, 1 W
C5, 9	2,000 $\mu$ F	L3	See text	R15	10,000 ohms, 3 W
C6, 7	200 $\mu$ F	L4	30 t. 24 t.p.i. followed by 12 t. 12 t.p.i., 18 s.w.g., tapped at 20, 26, 36 and 37 t. for 7, 14, 21 and 28 Mc/s, respectively	R14	2 ohms (made from electric heater element)
C8	300 $\mu$ F variable			RFC 1	Eddystone 4-section
C10, 11, 12, 13, 14, 15, 16, 17, 18, 23	1,000 $\mu$ F	L5	Driver stage grid coils.	RFC 2, 3	Eddystone 2-section
C19	50 $\mu$ F	L6	See text	SW1	5-way, 2 bank
C20	20 $\mu$ F variable	M1	0-1 mA meter	SW2	5-way, single bank, heavy duty ceramic
C21, 22	See text	M2	0-250 mA meter	SW3	5-way, single bank
C24	250 $\mu$ F variable	R1, 8, 9, 10, 11, 12	470,000 ohms, ½ W	SW4	5-way, 2 bank
L1	10 H choke	R3	27,000 ohms, 3 W	SW5	s.p.s.t.
L2	Wound on 2½ in. diam. former, 8 t.p.i. using 18 s.w.g.	R4	6,800 ohms, 2 W	V1	807
L2 (a)	12 turns	R5	50,000 ohms, 1 W	V2	813
			40,000 ohms, 50 W	V3	KT66
				V4	VR150/30
				V5	EA50 or 6H6



built around an *Oak* 5 way 2 bank switch and enclosed in a screened box mounted on the front panel. The original coils were wound on  $\frac{1}{2}$  in. slug tuned formers but the only criterion is that a high L/C ratio should be maintained to ensure wide band characteristics.

Screened leads and sockets should be used for the remote monitor line and for the mains supply to the filament transformer.

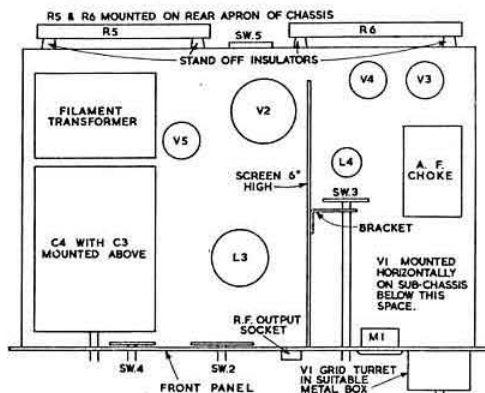


Fig. 2.—Suggested layout of the bandswitched transmitter.

### P.A. Tank Coil

The final amplifier coil L3 is wound on an *Eddystone* ribbed ceramic former (8 turns per inch) using 18 s.w.g. wire. The 24 turns are tapped at 3, 5, and 12 turns for the 28/21, 14 and 7 Mc/s bands respectively. The whole coil is used on 3.5 Mc/s.

### Testing the Transmitter

The voltage at the heater pins of the valves should first be checked to ensure that there is 6.3 V on V1, V3 and V5 and 10 V on V2. A 10,000 ohms resistor is then connected across pins 2 and 5 of V4 and with no drive the h.t. is switched on. The anode of V2 should now pass about 40 mA. Each range can then be checked, by swinging the tuning condensers over their full range. If there is any variation in the anode current while this is being done, self oscillation is occurring and *must* be cured. (In the original transmitter there was no instability during these tests, even with 2,000 V h.t.) The 10,000 ohms resistor is then removed. With the h.t. switched on, readings comparable to those in Table 1 should be obtained.

Drive should now be applied to V2, and C8 tuned for maximum deflection on M1, with

Table 1

Position of SW 4	Circuit position	Voltage (M1 used as 500 V f.s.d.)	Approximate current represented (mA)
Key up			
1	V3 anode	50	35
2	V2 screen	zero	
3	V1 screen	25	0.3
4	V1 anode	40	10
5	V2 grid	zero	
	V2 anode	(read on M2)	10
Key down			
1	V3 anode	420	zero
2	V2 screen	250	10-12
3	V1 screen	200	4
4	V1 anode	300	12-15
5	V2 grid	150	5
	V2 anode	(read on M2)	100

Representative meter readings taken with the transmitter adjusted for operation on 7 Mc/s H.T. voltage 1,500.

SW4 on position 4. C20 should be peaked if necessary. With C4 at maximum capacity and a dummy load connected to the transmitter, C3 should be tuned for maximum dip in M2. The aerial coupling link and C4 should then be adjusted until the p.a. is drawing 100 mA anode current. C3 must, of course, be adjusted for maximum dip.

It is possible to use V1 as a doubler if it is driven hard enough but the harmonic content will rise. The practice is not recommended as the valve should operate under approximately Class B conditions as a linear amplifier.

### Conclusion

It should not be assumed that the principles outlined are confined to the valve types named or the operating conditions stated above. Lower power transmitters using suitable valves may be adapted to this system and the author is convinced that improvements can be effected with previously troublesome circuits. Details of conversions which have been followed by marked reduction of harmonic output would be appreciated.

### The Television Society

MEETINGS of the Television Society, unless otherwise specified, are held at the Cinematograph Exhibitors' Association, 164 Shaftesbury Avenue, W.C.2 and commence at 7 p.m.

The programme for the first part of the Winter Session, 1953-54, is as follows: September 24—"Transistors and other crystal valves" by D. D. Jones, M.Sc. (G.E.C. Research Laboratories); October 9—"Recording Television Programmes" by C. B. B. Wood (B.B.C. Research Dept.); October 22—"Flywheel Synchronising and Scanning Circuits," by H. Fairhurst (Murphy Radio Ltd.); November 13—Discussion on Competitive Television; November 26—"Converters for V.H.F. and U.H.F. Television"; December 17—"Information Theory and Television" by Dr. E. C. Cherry (Imperial College).

Non-members are admitted by ticket only, obtainable from members of the Television Society or from the Society's offices, 164 Shaftesbury Avenue, London, W.C.2.

### British Institution of Radio Engineers

LECTURE on "The Impact of Communication Theory on Television" will be given by D. A. Bell, M.A., B.Sc., Ph.D., at the London School of Hygiene and Tropical Medicine, Keppel Street (Gower Street), London, W.C.1 on September 30 at 6.30 p.m.

### The Right Idea

THOSE who visited the National Radio Show and glanced through the latest McMichael Radio catalogue will have read some heartening news for Radio Amateurs. Announcing their range of television receivers for 1954, the Company makes these pertinent remarks: "Aerial Filters. To reject interference caused by Wrotham, Gee stations, third harmonics, . . . etc., it has been the practice to fit separate filters to aeri-als. In these new models, the necessary filters are *built into the set*." In addition, the Company is now using an improved r.f. circuit to give higher gain and greater selectivity than that normally found in television receivers. The intermediate frequencies employed are 34.5 Mc/s for vision and 38 Mc/s for sound.

McMichael Radio are to be congratulated on this realistic approach to the problem of TVI and for giving a lead in the right direction.

# Simple 70 cm Equipment

An easily built transmitter and receiver for local work

By A. H. KOSTER, Dr. Ing. (G3ECA)\*

The seeming complexity of crystal controlled equipment for 70 cm has no doubt dissuaded many who would like to commence with simple equipment. While the transmitter and receiver described here were not planned with long distance work in mind, they are eminently suitable for gaining experience on this interesting band.

THERE is undoubtedly a demand from many amateurs for self-excited 70 cm equipment. Use of such equipment in that band which is 40 Mc/s wide is permissible, although any attempt to do so on 2 metres would end in chaos. The r.f. power which self-excited transmitters can produce with readily available valves is at least equal to that of most crystal controlled types. However, in the interests of those who are developing crystal controlled equipment, it is recommended that self-excited

6-inches long through which the heater leads are threaded.

The method of mounting L1 C1 is shown in Fig. 2. L1 is made of brass or copper strip,  $1\frac{1}{2}$  in. x  $\frac{1}{16}$  in. x  $\frac{1}{8}$  in.; C1 is a Philips 3-30  $\mu$ F trimmer. The chokes RFC 1 and RFC 2 consist of 12 turns of 20 s.w.g. enamelled wire,  $\frac{3}{16}$  in. i.d., stretched to  $\frac{1}{2}$  in. long. R.F.C. 1 is connected to L1 at a point  $\frac{1}{4}$  in. from the anode horn. L3—the cathode line—is mounted parallel to the chassis at a distance of  $\frac{1}{2}$  in. and connected to it at one end. L3 is fitted with a slider in the form of an adjustable clip which serves to tune the line. Initially, the clip should be set 4 in. from the cathode pin and provisionally fixed to the chassis (Fig. 3). The Philips trimmer C1 is set about half-way out. On application of 210 V h.t. the circuit will oscillate readily. R2 is then adjusted for an anode current of 20 to 30 mA, the presence of r.f. power being indicated by a loop lamp. (Not all bulbs are suitable at 420 Mc/s). With the aid of Lecher wires (1), the frequency is adjusted to about

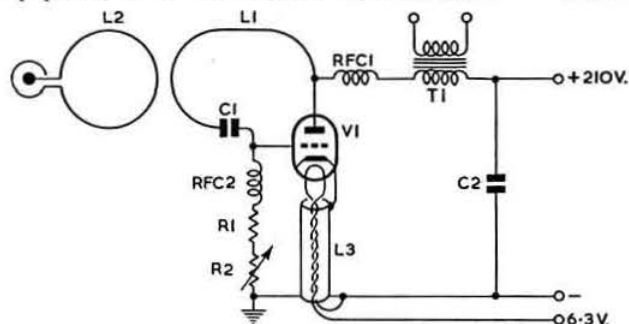


Fig. 1.  
Circuit diagram of the self-excited 70 cm transmitter. C1, 0-30  $\mu$ F Philips trimmer; C2, 1  $\mu$ F; L1, L2, see text; R1, 1,000 ohms; R2, 10,000 ohms; RFC1, 2, see text; T1, modulation transformer; V1, CV6.

transmitters should not be operated in the range 432-438 Mc/s, which is the portion of the band harmonically related to 144-146 Mc/s. It will also be appreciated that an s.e.o. will cause severe interference to Amateur TV transmissions. For these reasons, s.e.o. stations are urged to operate between 420 and 425 Mc/s and between 455 and 460 Mc/s.

The equipment to be described, although simple, is adequate to satisfy the requirements of local working over a range of 10 miles or more, depending on the location. The limitations of the equipment are set by the 1-valve receiver which cannot compete with a well-designed converter and communications receiver arrangement.

## The Transmitter

The transmitter (Fig. 1) uses a series tuned tank circuit L1 C1 which is soldered to the grid and anode horns of a CV6 valve. When choosing valves, those which have flat ribbon connecting the electrodes to the horns should be selected in preference to those with wire connections. All unused base pins must be removed, leaving only numbers 2, 7 and 8. Unwanted contacts must also be removed from the valveholder which should be made of ceramic. The cathode pin is soldered to the tuned line L3 which consists of a  $\frac{1}{8}$  in. (or  $\frac{3}{8}$  in.) diameter brass or copper tube

425 Mc/s by means of C1. The tap on the cathode line is then adjusted for maximum brilliance in the loop lamp. If the tap was approximately correct to begin with, the adjustment will have little effect on the frequency, which should, however, be checked again.

The ratio of the modulation transformer is not critical; 1:1 is generally satisfactory. When modulation is applied, the brilliance of the loop

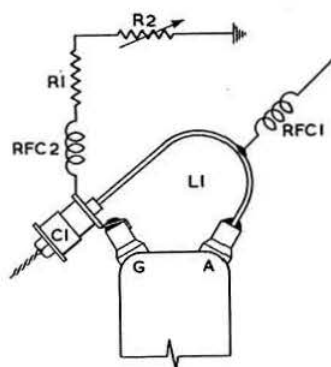


Fig. 2.—The arrangement of the grid-anode circuit in the simple transmitter.

\* 195 Woodford Avenue, Ilford, Essex.

lamp should increase noticeably. The aerial coupling is best adjusted with the aid of a field-strength meter or by reliable reports. After the coupling has been adjusted, the frequency should be re-checked.

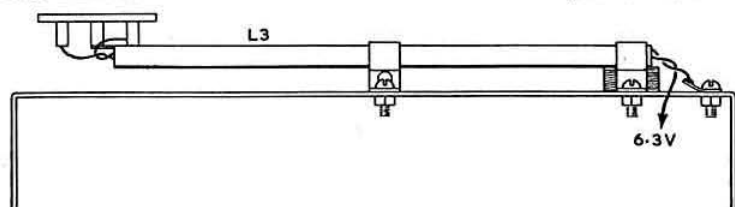


Fig. 3.  
The mounting of the cathode line in the 70 cm transmitter is illustrated in this diagram.

### The Receiver

The simple receiver (Fig. 4) is a super-regenerative type and can be followed by one or two stages of a.f. amplification, but special care in screening and decoupling must be observed. A resistance of 5,000 ohms across the primary of the a.f. transformer is useful in suppressing instability.

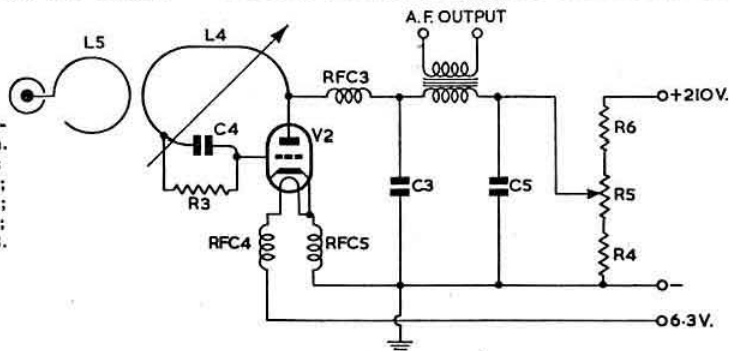
Suitable valves for use in the receiver are the 955 and RL18. The CV6 will work but may prove troublesome: the other types suggested, however, are easy to handle. L4 is a loop of 16 s.w.g. copper wire  $1\frac{1}{2}$  in. in diameter and C4 is a

to the plane. The movement tunes the receiver from 420 Mc/s in the  $60^\circ$  position to 435 Mc/s in the parallel position.

The receiver is initially tested by advancing the potentiometer R5 until a "rushing" sound in the

phones indicates that super-regeneration is taking place. This test is made without the aerial being connected. The frequency can then be checked by bringing the loop of the Lecher wires near to L4. When the receiver is tuned to the same frequency as the wires a distinct change in noise will be observed; if the coupling is too tight the noise will cease altogether. The aerial coupling consists of a hook-shaped piece of 16 s.w.g. copper wire. If balanced feeder is used it is preferable to use a normal coupling loop. After the receiver has been calibrated the aerial is connected and the

Fig. 4.—Circuit diagram of the super-regenerative receiver for 70 cm. C3, 0.001  $\mu$ F; C4, 0–30  $\mu$ F Philips trimmer; C5, 0.05  $\mu$ F; L4, L5, see text; R3, 5 Megohm; R4, 20,000 ohms; R5, 50,000 ohms; R6, 10,000 ohms; RFC3, 4, 5, see text; V2, 955 or RL18.



Philips 3–30  $\mu$ F trimmer which is by-passed by a 5 Megohm resistor, R3. The mechanical arrangement is shown in Fig. 5. The chokes are made in the same way as those used in the transmitter, those in the cathode circuit being connected close to the valveholder as shown in the photograph.

### Tuning

Tuning is achieved by means of a 1 in. diameter copper or brass disc which is arranged to line-up with L4. A piece of 6 B.A. studding which fits into one end of a polystyrene TV coil former is soldered at an angle of  $60^\circ$  to the centre of the disc. A  $\frac{1}{2}$  in. shaft connected to the other end of the coil former is driven by a slow-motion drive. The plane of L4 is also at  $60^\circ$  to the shaft so that a  $180^\circ$  turn of the shaft will rotate the disc from the parallel position shown in Fig. 6 to a position  $60^\circ$

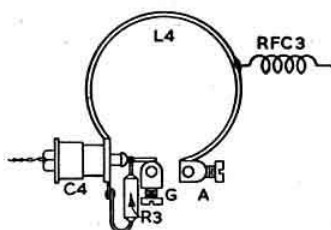


Fig. 5.—Method of arranging the grid-anode components in the simple receiver.

coupling hook adjusted so that super-regeneration noise remains audible over the whole tuning range. The spacing between the "hook" and L4 is generally about  $\frac{1}{4}$  in.

The receiver is suitable for receiving a.m. and f.m. transmissions.

### Aerial Arrangements.

A suitable beam aerial for use with 300 ohm feeder has been described in the R.S.G.B. BULLETIN (2). If 75 ohm co-ax is to be used the upper and lower part of the folded radiator should be made of  $\frac{3}{8}$  in. tubing and fed through a balanced-to-unbalanced (*balun*) transformer (3).

For local working it is often desirable to use an omni-directional aerial. Such an aerial cannot have the gain of a beam and every effort should be made to obtain as flat a vertical pattern

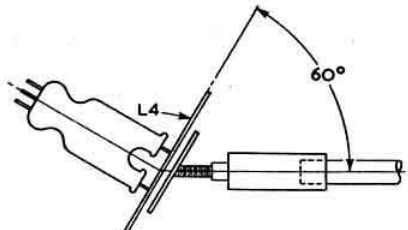
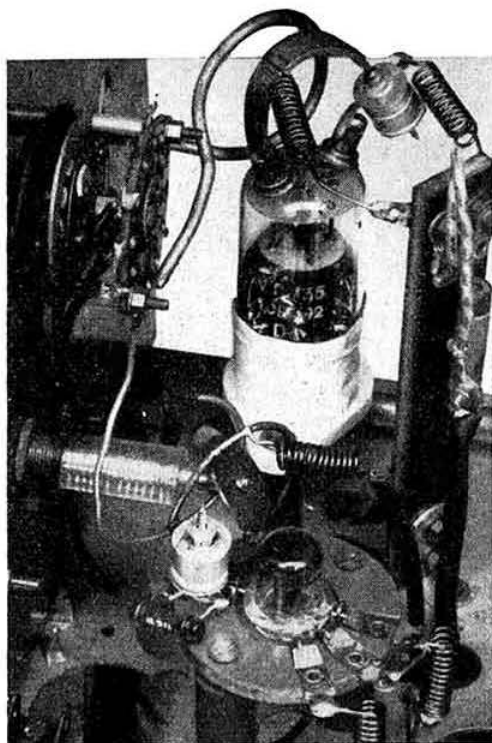


Fig. 6.—The mounting of the tuning disc in the receiver is shown in this diagram.



as possible. An aerial (4) which has given excellent results is illustrated in Fig. 7. It consists of two stacks having 5 half-wave elements each arranged



A close up view of the simple 70 cm equipment. The receiver section is in the foreground.

#### Radio Amateurs' Examination

##### Closing Date for Entries Extended

THE G.P.O. announces that a Radio Amateurs' Examination will be held on Saturday, October 3, 1953, from 2.30 to 5.30 p.m. at (a) the Cripplegate Institute, Golden Lane, London, E.C.1 (convenient tube stations—Aldersgate and St. Paul's); (b) the Office of the Radio Surveyor, Custom House, Dock Place, Leith, Edinburgh, and (c) the Office of the Radio Surveyor, Ministry of Transport, Bute Place, Cardiff.

The examination fee (25/-) should be remitted by cheque, money order or postal order made payable to the Postmaster-General and should accompany the candidate's application to sit for the examination, stating the centre at which he desires to attend. The original closing date has been extended to September 21, 1953, to assist those who were on holiday earlier in the month. Applications should be addressed to the Inspector of Wireless Telegraphy, O.T.D., W.T.S., Room 632, Union House, St. Martin's-le-Grand, London, E.C.1.

THE number of entries for the Radio Amateurs' Examination held on May 1, 1953, was 57 fewer than in the preceding year. The general standard of the candidates' work was good. The

R.S.G.B. BULLETIN, September, 1953.

at right angles to each other. The elements ( $12\frac{1}{2}$  in. long) and the vertical feeders are made of  $\frac{1}{4}$  in. o.d. copper tubing. The elements are spaced  $13\frac{1}{2}$  in. centre-to-centre; the vertical feeders are spaced  $\frac{1}{2}$  in. between centres and are twisted between each tier. The stack is fed with 300 ohm ribbon attached to the junction of the middle elements and the vertical feeders.

The top and bottom elements of each feeder are bent from a piece of copper tubing 6 ft.  $6\frac{1}{2}$  in. long; the other elements are soldered to it. To ensure rigidity, ceramic or paxolin spacers are fixed between the tiers, larger spacers being used for mounting to the mast. A 1 in. wooden mast is fixed within the apex of the array so that the weight is evenly distributed. No appreciable length of the 300 ohm feeder should be tied to the mast, etc. Circular 300 ohm feeder is preferred for maximum efficiency under all weather conditions as the ordinary ribbon is affected by rain.

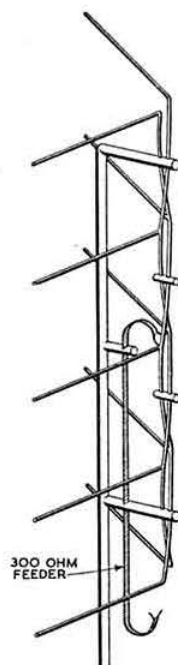


Fig. 7.  
Aerial system for 70 cm.

#### References

- (1) R.S.G.B. BULLETIN, October, 1948.
- (2) R.S.G.B. BULLETIN, September, 1951.
- (3) *Proceedings of the R.S.G.B.*, No. 6, 1949.
- (4) *Canadian Journal of Research*, January, 1948.

results are shown in the following table:

No. of Candidates	No. and percentage of passes	No. and percentage of failure
480	390 (81.25%)	90 (18.75%)

The question paper and the examiners' comments will be published in the October issue of the BULLETIN.

#### "Practical Wireless" Comes of Age

SOCIETY Members will wish to offer congratulations to *Practical Wireless* on its Coming-of-Age this month. Since September 24, 1932, when the first issue appeared, "P.W." has been published continuously, first as a weekly, until July 27, 1940, and then as a monthly.

Mr. F. J. Camm has been Editor throughout the whole period.

#### Caravan Coincidence

WHEN Philip Nicol, GSZN—who has a caravan on a site near Whalley, Lancashire—went to welcome a newcomer he found he was F. Haworth, G6BH, whom he has known on the air for 20 years but had not previously met in person.

# Television Transmission for the Amateur

## Part IV—Simple "Live" Camera and Pulse Generator

by M. BARLOW (G3CVO)\*

In this article, the author suggests a method of scanning opaque objects and live subjects and describes in detail a pulse generator capable of producing all the necessary pulses in correct relationship to one another.

PREVIOUS articles in this series have only considered the problem of transmitting transparencies prepared photographically or drawn by hand on celluloid or tracing paper. The photographic method is expensive and time consuming, while celluloid and tracing paper are not good materials to draw upon; both introduce a loss of light in the system.

The transmission of opaque objects, such as title cards which can be simply drawn on ordinary paper, is obviously desirable. It can be done by reflection scanning, that is, by true "flying spot" scanning. The raster on the scanning c.r.t. is projected through a lens to cover the subject matter, the reflected light being picked up by a photocell. An arrangement of this type is shown in the photograph. In a similar manner, any flat, opaque matter can be transmitted and it is also possible to scan live subjects. The equipment therefore makes an inexpensive and convenient form of "live" camera.

The photocells recommended are practically insensitive to red light, so that the "studio" can be lit with dim red light, just sufficient to see by, all other sources of light being blacked out. The scanner and photocell are set up with the subject standing in place of the title card. The raster must be focused on to the subject. The depth of focus obtained, i.e., the maximum movement the subject can make without going out of focus, will depend on the lens in use. A suitable lens is the ex-R.A.F. *Pentac* camera type, currently available for about £5. These lenses, when used with a 5FP7 or similar scanner tube, give a depth of focus of about 3 in. when the subject is 4 ft. from the "camera." A projection tube such as the *Mullard* MW6/2 is ideal for this purpose, although the persistence of its screen is too long for normal transparency scanning. The tube is small and flat faced, and uses 25 kV e.h.t. Precautions are necessary with such high voltage and the makers' recommendations as regards screening against the effects of X-ray radiation should be closely followed. It appears that the increase in brilliancy obtained with one of these tubes offsets, to some extent, the long decay characteristic of the surface making them satisfactory for such use. A short persistence type of projection c.r.t. would be even better, but good results can be obtained with the MW6/2. Whatever type of tube and lens is used, the amount of light reflected by the average subject is extremely small, so the photocells should be mounted behind large condenser lenses, or in car headlamp reflectors. Two or more photocells can be used, each with its own pre-amplifier feeding into a common video amplifier; different "lighting" effects can be produced by variations in the outputs.



Arrangement for reflection scanning of opaque material. A 3 in. diameter plano-convex condenser lens is used in front of the photocell on the left. The 5FP7 scanning tube with its 5 in. focal length lens is on the right.

### Other Developments

The basic ideas already given can be applied to many individual problems, such as the televising of motion picture films, TV microscopy and facsimile transmission. It is not proposed to discuss these arrangements in detail, but the interested reader is referred to data published by members of the British Amateur Television Club in the Club's journal *CQ-TV*.

### Faults

It is probable that the picture quality obtained from any of the systems so far described will not be very good, and without expensive test gear it may be difficult to locate the exact source of the trouble. The various tests described in Part III should, however, help to clear up some faults but further details may be helpful.

It must be remembered that the shape of the amplifier response curve affects picture quality. Excessive h.f. response, due to the time constants of the coupling and/or decoupling components being too small, or unsuitable values of peaking coils, if fitted, will cause the circuit to "ring," i.e., oscillate. All black edges will be followed by a white line, then perhaps by a further, fainter black one and so on. A small amount of this "black-after-white" effect helps the apparent sharpness of the picture, but too much of it must be corrected by attention to the components mentioned.

Excessive l.f. response, due to unduly large time constants, causes "streaking." Black objects have

\* 29 Loftin Way, Chelmsford, Essex.

streaks trailing from the right hand edges, sometimes across most of the picture. The remedy is to alter the time constants.

Insufficient h.f. response causes loss of detail, fine lines being blurred or entirely missing. The upper limit of response can be measured by finding the minimum width of vertical line that can be resolved; this is converted into Megacycles per second by taking the width as a fraction of the line length and remembering that under B.B.C. standards one line lasts 82.5 micro-seconds.

Too little i.f. response causes uneven shading in large patches of similarly shaded picture areas. Again, the remedy lies in attention to the time constants, peaking circuits, etc.

A noisy picture, that is, one having excessive "snow," may be caused by the photocell voltage being too high, high amplifier gain, excessive h.f. boost, noisy resistors, light getting into the optical system or the type of screen on the scanning tube having a different response to that of the photocell.

When these points have been attended to, the picture should be recognisable and sufficient for such purposes as televising titles and call signs. The reproduction of photographic negatives may not be very good in spite of efforts to improve the camera chain quality. Further improvements must be made elsewhere.

### The Pulses

The common time base circuit given in Part III used a very simple network for mixing the pulses obtained at the transitron grids during flyback. The system has severe disadvantages, one of which is that this method of connecting the two time-bases together distorts and reduces the scan produced. A separate valve pulse mixer would be much better but in any case the system is not very satisfactory for the following reasons. At the end of each line, the signal level—on B.B.C. standards—must fall to zero during the sync pulse. If there is a white object at the right hand side of the picture, the depth of modulation must change from 100 per cent. to 0 per cent. instantaneously, for it is the leading edge of the sync pulse which triggers the time bases; any delay upsets the synchronisation. This causes the left-hand edge of the picture to be ragged and unsteady. Also, during the frame flyback pulse, which lasts for several lines, the line time base can go off frequency, which causes the top of the picture to be displaced or even to tear a little. Finally, it is highly probable that the entire picture will be fringed with a white border, so that only the centre has a reasonable degree of contrast. Attention to these points improves the picture tremendously and is just as important as making improvements to the camera unit.

### Pulse Requirements

It is necessary to know what pulses are required before a suitable pulse generator can be designed. Line A in Fig. 1 shows the simple output from the common time base unit described in Part III. By adding this waveform to the waveform marked B (which is identical except that the pulse widths are larger), guard areas, known as front and back "porches" are added to the sync pulses. These wider pulses—blanking or suppression pulses—are fixed at the 30 per cent. (i.e. black) modulation level and provide a short interval before the start of the sync pulse, thus ensuring rigid synchronisation. B.B.C. standards are for a line sync. pulse of 10 microseconds duration, preceded by a front porch of 0.5 microseconds and followed by a back porch of 6 microseconds. The line blanking pulse is therefore 16.5 microseconds long; it starts 0.5

microseconds before the line sync pulse. For the frame, the sync pulse is 400 microseconds long and the blanking pulse 1400 microseconds; no front porch is required as the timing of the frame circuits is much slower than for the line. Both frame pulses, therefore, start at the same instant.

The last requirement is for some pulses to be inserted in the frame sync pulse to keep the line time base from drifting off frequency. For full interlaced working, half-line pulses are used, but in simple equipment the line pulses inserted in opposite polarity, as shown in Fig. 1 (E), can be used. It should be noted that as the time bases trigger on the leading edge of the sync pulses (that is the negative-going edge in Fig. 1) the inserted line pulses in the frame interval must be displaced 10 microseconds to the left (i.e. earlier in time) so that the negative-going edge is correctly timed. The main sync pulses are triggered by the trailing edge of the inserted pulses.

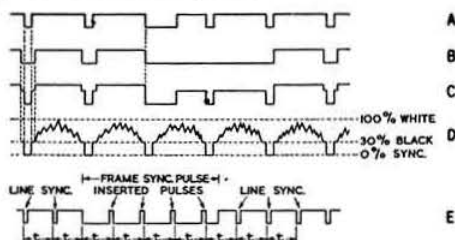


Fig. 1.—Time base waveforms.

### The Pulse Generator

A pulse generator developed from a full 405 line interlace generator designed by D. E. Radley and A. E. Sale and suitable for amateur use is shown in Fig. 2. It uses as few components as possible, requires the minimum of setting up and is reliable and easy to build. Its operation can best be understood by reference to the block diagram shown in Fig. 3. V2 is a multi-vibrator running at 10 kc/s generating a 10 microsecond pulse. This valve can be locked to a 100 kc/s crystal if necessary, but its frequency will remain fairly stable provided the h.t. voltage does not fluctuate unduly. For simple sequential operation, a slight variation in the number of lines in the picture does not matter.

The trailing edge of the pulses from V2 are used to lock V1, another 10 kc/s multivibrator generating a 16.5 microsecond pulse. The line blanking pulses are therefore delayed 10 microseconds relative to the pulses from V2. The V2 pulses are further delayed in a delay line (marked "A"), the delay being 0.5 microseconds for a correct front porch. These pulses are then applied direct to V5 and also to a further delay of 10 microseconds (marked Delay B in Fig. 3). Owing to the relatively long delay required, a differentiating-clipping network is employed instead of a delay line.\* The output from this network is applied to V6, the pulses being the main line-sync pulses.

V5 and V6 are connected as a 50 c/s multivibrator between screen and control grids, the duration of the pulse being 400 microseconds. The line sync pulses and the inverted pulses are fed into the two suppressor grids so that a complete sync signal is obtained at the common anode. The 50 c/s multivibrator is locked to the mains via V3, which has 350 V. a.c. applied to its control grid; the network R10, R11 and R12 causes it

\* A delay line is an artificial transmission line, made of suitable inductors and capacitors, used to delay any pulse by the time of transmission along the line. By correct choice of component values, any pulse can be delayed by a time of the order of 1 or 2 microseconds.

to generate a 1400 microsecond frame blanking pulse. Line blanking is fed in on the suppressor grid so that a complete blanking signal is available at the anode. V7 is a double cathode follower. Fig. 4 shows how the pulses are timed in relation to each other.

The delay line in the anode of V2 can be made up from suitable components or an ex-Government delay line can be tapped until approximately the correct delay is obtained. R20, R22 and C14 are critical components and their values should be adhered to. The differentiated pulses are clipped

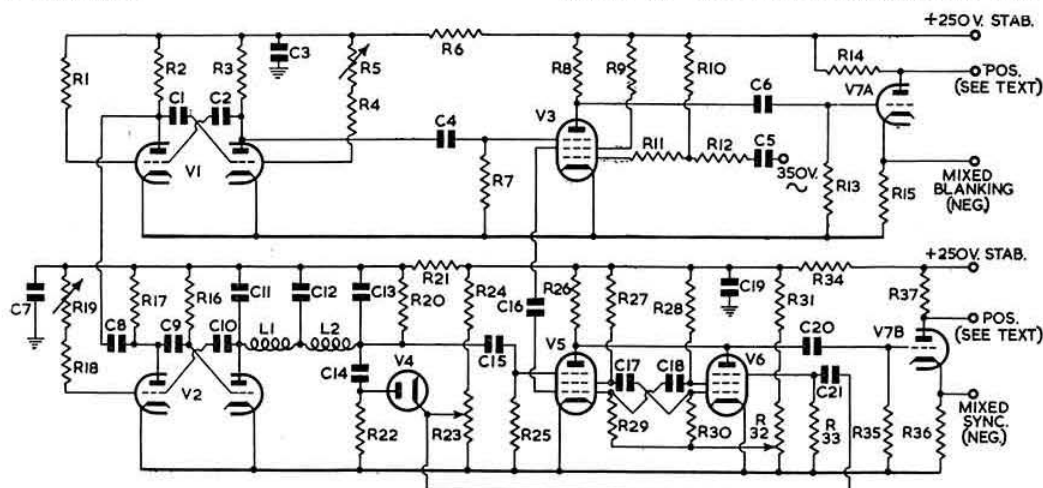


Fig. 2.—Circuit diagram of the simple Pulse Generator for amateur use.

C1, 10	200 $\mu$ F
C2, 9	100 $\mu$ F
C3, 4, 5, 7,	
15, 20	0.01 $\mu$ F
C6, 19, 21	0.5 $\mu$ F
C8	20 $\mu$ F
C11, 13	25 $\mu$ F
C12	50 $\mu$ F
C14	680 $\mu$ F
C16	0.002 $\mu$ F
C17	0.001 $\mu$ F

C18	0.05 $\mu$ F
L1, 2	1.25 mH
R1, 11, 16, 24	2 Megohm
R2, 3, 8, 17,	
20, 22, 26	4,700 ohms
R4, 10, 12	100,000 ohms
R5, 19, 32	1 Megohm, variable
R6, 21, 34	2,200 ohms
R7, 13, 25,	
33, 35	1 Megohm
R9	15,000 ohms

R14, 15, 36,	
37	470 ohms
R18, 31	200,000 ohms
R23	100,000 ohms variable
R27, 28	10,000 ohms
R29, 30	470,000 ohms
V1, V2	6SN7, 12AU7
V3, 5, 6	VR116, 6F33
V4	EA50
V7	6SN7, 12AT7 or two
	P61s

### The Circuit

Although the circuit is straightforward a few additional details may be helpful. R5 and R19 are intended to give a fine control over the pulse width of the blanking and sync pulses respectively. Their

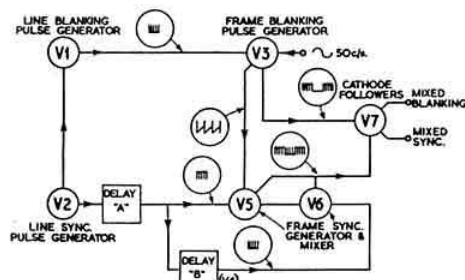


Fig. 3.—Block diagram of the pulse generator.

adjustment will vary the frequency of operation slightly and it may be necessary to alter R1 and R16 in order to get the correct pulses. These two circuits should be adjusted first (using an oscilloscope; V1 should then be locked to V2, making sure that V1 is locking on the trailing edge of the V2 pulses. With the oscilloscope set to 50 c/s, R10 is then adjusted until a 1400 microsecond pulse is obtained. This can be done by setting the mark-space ratio to about 13 to 1. C4 may next be connected into circuit and a check made that a complete blanking waveform, negative going, is being produced at the anode of V3 and at the cathode of V7A.

by V4 which is biased by R23—the line sync pulse-width control which should be set to give a mark to space ratio of approximately 10 to 1. The pulse shape will not be exactly rectangular but will have a very sharp leading edge. With an oscilloscope connected to the screen grid of V5, condensers C15 and C20 should be disconnected and C16 joined to the control grid; the 50 c/s

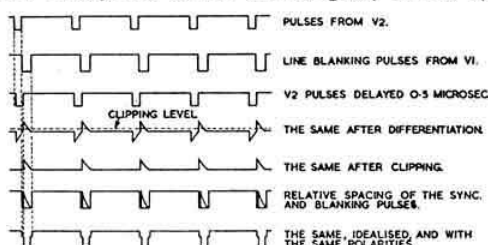


Fig. 4.—Waveform patterns produced by the Pulse Generator shown in Fig. 2.

multivibrator should now be locked to the mains. The mark to space ratio will be about 50 to 1 with the components specified. Using balanced components, no waveform will appear at the common anode, but a slight variation will not be harmful. C15 and C20 should then be reconnected.

With care, it should be possible to see, on an oscilloscope, the changeover from positive to negative line pulses during the frame interval at the anode of V5. The same waveform, clipped, should also appear at the cathode of V7B.

Although both mixed sync and mixed blanking (Continued on Page 116.)



# The Elizabethan

## Drilling Plans and Supplementary Notes

By LOUIS VARNEY, A.M.I.E.E., (G5RV)\*

As a result of the many enquiries received following publication of his latest design in the July, 1953, issue of the "Bulletin," the author has prepared the detailed drilling plans presented here, together with some additional notes on both the Elizabethan and the modified 75 W transmitter.

A CLOSE examination of the layout drawings for the chassis (Fig. 1) and panel (Fig. 2) will show that they differ slightly from those used for the model of the Elizabethan described in the July, 1953, issue of the BULLETIN but the present plans are recommended.

The seven holes about the centre line of the rear apron of the chassis are used to bring out the various supply leads to a seven-way terminal block mounted by the fixing holes spaced  $1\frac{1}{2}$  in. apart. A multi-way screened cable may be used between the transmitter and the power supply units if desired. The two  $\frac{1}{16}$  in. diameter holes on the rear apron of the chassis are for the control and key jack sockets.

Particular care must be taken to clean all flanges and corresponding areas on the chassis and panel to ensure efficient screening. It is not sufficient to rely on the contact made by holding-down screws.

\* 184 Galleywood Road, Chelmsford, Essex.

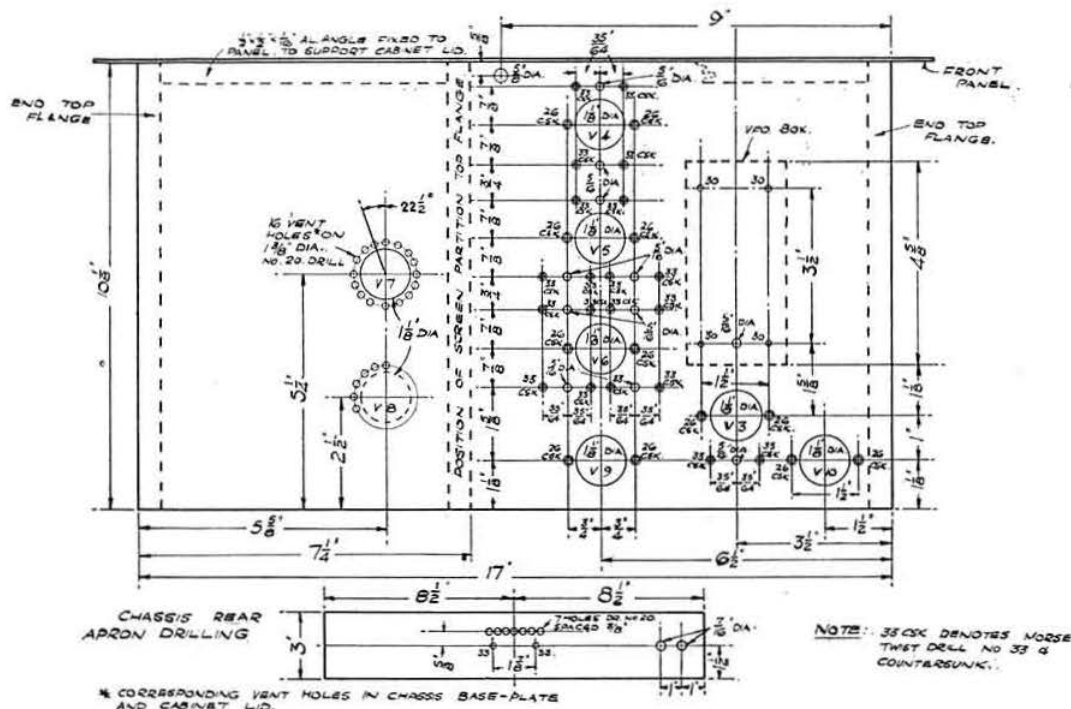
Mating surfaces of panel and chassis must similarly be cleaned of all paint.

When using a  $2\frac{1}{2}$  in. Eddystone ceramic former the correct winding details for L2 are as follows: 10 turns, 14 s.w.g. enamelled copper wire wound 8 turns per inch. The coil should be tapped from the anode end at 2 turns (21 Mc/s), 4 turns (14 Mc/s) and 6 turns (7 Mc/s). The former shown in the photograph of the Elizabethan on page 11 of the July BULLETIN has more turns because it is of smaller diameter.

### Component Substitution in the Elizabethan

The p.a. anode tuning condenser (C42) used in the original was obtained from a Canadian TA12 transmitter. A good substitute is the twin-gang 200  $\mu$ F per section variable condenser from the m.o. section of an R.A.F. T1154 transmitter. Alternatively, any suitable 150  $\mu$ F variable may be used and an additional 200  $\mu$ F fixed transmitting type mica condenser switched in in parallel on 3.5 Mc/s only.

Of the two EF91 valves mounted on top of the v.f.o. box, V2 is the one nearest V3, thus ensuring a short (screened) lead from V2 via C13 to the grid of V3. The relatively long link coupling between the primary of W.B.C.1 (mounted near V3) and its secondary (mounted between V4 and the front panel) is quite satisfactory at the relatively low frequency in use. A Clapp v.f.o. circuit may be used in conjunction with V1 if desired.



As 6AG7 valves are difficult to obtain, a Mullard EF55, Marconi N78 or S.T.C. 5763 may be used for V3 if necessary.

#### Alternative P.A. Coil Unit for the 75 W Transmitter

A suitable coil pack for the single 807 p.a. may be constructed on the lines of that shown in the photograph on page 15 of the July, 1953, BULLETIN. Three coils are used to cover the range 1.8 to 30 Mc/s. L1 is mounted above C42 by soldering one end direct to the stator terminal of the condenser. The other end is connected to L2. The junction of these two coils is the 14 Mc/s tapping point; the junction of L2 and L3 is the tapping for 3.5 Mc/s. L1, L2 and L3 are used in series on "Top Band." The original SW2A (Fig. 2, July 1953) is used to switch C42A in parallel with C42 on

#### Coil Data for the 75 W Transmitter

- L1 12 turns, 14 or 16 s.w.g.,  $1\frac{1}{2}$  in. inside diameter, winding length  $1\frac{1}{2}$  in., self-supporting. Tapped at 6 turns from anode (28 Mc/s) and 8 turns (21 Mc/s).
- L2 10 turns, 18 s.w.g., spaced  $1/16$  in. followed by 16 turns close-wound, on  $1\frac{1}{2}$  in. diameter ribbed former (ex-T1154). The junction of the 10 and 16 turn sections is the tapping for 7 Mc/s.
- L3 30 turns, 22 s.w.g., wound 16 t.p.i. on  $1\frac{1}{2}$  in. diameter former. (May be obtained ready wound from m.o. section of T1154.)

1.8 Mc/s only; SW2B selects the appropriate coil taps and SW2C selects the coarse loading condensers.

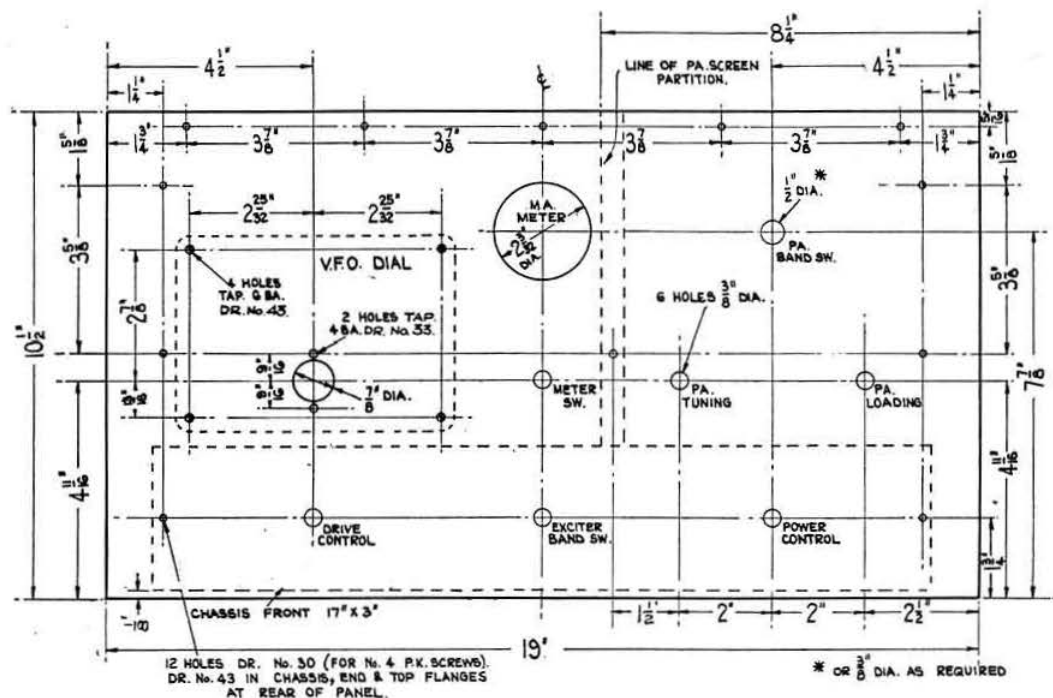


Fig. 2.—Panel layout of the Elizabethan.

#### TELEVISION TRANSMISSION FOR THE AMATEUR.— (Continued from page 114).

pulses are available at the cathodes of V7, separate feeds can be taken from other points in the circuit, provided the leads are kept as short as possible. Similarly, positive going sync or blanking pulses can be taken from the anodes of V7.

\* \* \*

In the next article in this series, the manner in which the pulses are mixed with the vision signal and passed to the modulator will be discussed.

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#### "TELEVISION TRANSMISSION FOR THE AMATEUR."

Back issues of the Bulletin containing Parts I, II and III are available from Headquarters, price 1s. 6d. per copy (post free).

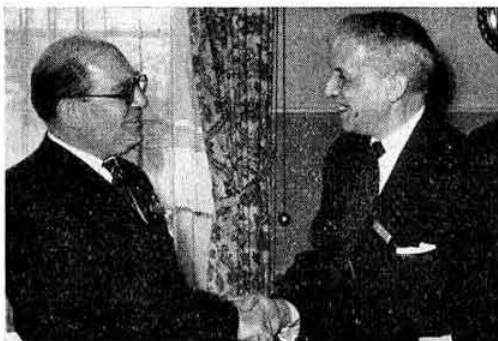
# D.A.R.C. Kurzwellentagung 1953

By LESLIE COOPER, G5LC (President)

**A**CCOMPANIED by Mrs. Cooper and our younger son Tony, I attended—as the representative of the R.S.G.B.—the D.A.R.C. Kurzwellentagung, or Short-Wave Amateur Radio Convention, at Iserlohn, Germany, from August 6th to August 9th, 1953.

The centres of activity were the Alexanderhohe—a lovely building comprising the Park Theatre, many lecture halls and restaurants—and the Altenhalle, in which an exhibition of interest to short-wave enthusiasts was held.

The local organisation was under the direction of Eduard Wessel, DL1MJ, and I cannot speak highly enough of the excellence of the programme devised and the ease with which it ran.



The President of R.S.G.B. with the President of D.A.R.C.

For the younger amateurs, a camp was set-up in the adjacent woods and above the woods in the Danzturm these young people ran a 5 watt station. The height of the tower and the hill on which it was set was about 1,000 ft. a.s.l.

It would be quite impossible in the space available to give a full account of the programme. Suffice to say that it usually commenced at 8 a.m. and finished in the early hours.

I spent the morning of the first day (Thursday, August 6th) inspecting the Exhibition and the Exhibition station, later attending an informal luncheon party given by the President of D.A.R.C. (Herr Rapcka, DL1WA). Representatives of the Yugoslav, Swiss, Dutch and Danish Societies and of the German Press were also present. The afternoon was taken up with a visit to the Graetz Altena Radio Factory, Altena Castle and the Dechenhohle Caves.

Friday saw the arrival of amateurs from U.S.A., Italy and Saarbreuken. On this day, too, the first of the formal events took place when the D.A.R.C. and their guests were officially welcomed at the Heimatmuseum by the Oberburger-Meister of Iserlohn. Speeches of welcome were made by the Oberburger-Meister and the President of D.A.R.C. I had the honour of replying on behalf of all the foreign visitors. Light refreshments were then taken with the Oberburger-Meister and Members of the Iserlohn Town Council. My family and I were later entertained at the home of Renate and Ernst Aurand, DJ1YL, and DL6KJ. Incidentally, Renate acted as interpreter for the greater part

of the Convention.

New arrivals on Saturday included G. C. (Si) Oxley, G8MW, and old-timer Major Jack Drudge-Coates, DL2RO/G2DC. The morning hours that day were set aside for the D.A.R.C. official welcome to all amateurs. This function—called the Festsitzung—took place in the Park Theatre. A full orchestra played on the stage between the various speeches. During this event I spoke on behalf of the R.S.G.B. and presented a Society pennant to Herr Rapcka. In return, I became the recipient of a D.A.R.C. pennant.

## Fox Hunt

During the afternoon DL2RO and I teamed-up in an exhausting event—a two metre fox hunt (direction finding contest). A hidden transmitter was placed high up on a wooded slope about five miles outside the town and five groups of amateurs and their followers set out on foot to run it to ground. DL2RO and I “backed” two youngsters, aged 17 and 19 respectively (Dieter Maedal and Gerhard Seidel) who had designed and built a portable two metre double superhet. The fun started when those with super-regen. receivers switched on. At that moment I acquired some German words not usually found in the dictionary! However, after splitting-up we eventually got on to the trail—down through the market, with all its smells, and out into the country. By this time only our team and one other seemed in the running. As no compasses or maps were used it was a case of follow the beam or else! The beam being held above the operator's head, umbrella fashion. After literally dropping down the side of a steep slope we crossed a cornfield to the bottom of a densely wooded hill, and on the top of the hill we found the hidden transmitter. And our team was first home! Needless to say Jack and I were very tired from our cross country run, but the German amateurs were loud in their praise that two old-timers had stuck it out and kept the British flag flying and were there with the winners.

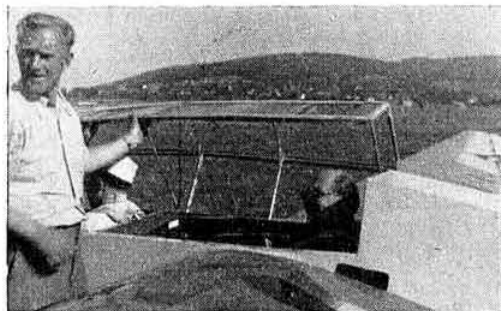


During the 2 metre Fox Hunt G5LC discusses plans for the chase with the two young German amateurs he and DL2RO decided to team up with. The team was first home.

### Grand Hamfest

Saturday evening saw the first of the main social events, "The Grosse Hamfest," when some 800 amateurs crowded into the Altenhalle for a cabaret, dance and general get-together.

On Sunday morning my elder son (2nd/Lt. John Cooper, who had come down to join us from Oldenburg) and I attended the local garrison church at 8 a.m. At 9 a.m. we were drinking coffee at Alexanderhohe. During the rest of the morning discussions took place on many subjects of common interest, such as band occupancy, emergency networks, I.A.R.U. and future conventions.



Glider enthusiast Leslie Cooper about to take off on his first glider trip.

The Sunday afternoon programme included a visit to the Hemer gliding airfield. Whilst at the airfield my younger son and I accepted an invitation to enjoy a glider flight. After the flight we were given certificates signed by all the amateurs present. Incidentally gliding can be recommended as a wonderful sport, in fact many German amateurs combine both hobbies.

The function on Sunday evening—which brought to an end a superbly organised Convention—took the form of a grand gathering in the Altenhalle, with raffles, prize-giving, cabaret and dance. Before we finally broke up I thanked D.A.R.C., on behalf of all visiting amateurs, for all that had been done for our comfort and enjoyment.

### Random Thoughts

The paramount thought is of the genuine friendship shown to me, to my family, and to the R.S.G.B. It was made clear that our Society is held in the highest esteem and that an immense amount of goodwill had been won by our visit. It was made equally obvious that previous official visits by Society representatives to overseas conferences (Stockholm 1950, Paris 1950, Zeist,



The President with Major Jack Drudge-Coates, DL2RO (extreme left) and members of D.A.R.C.

Holland 1951, Copenhagen 1952, and Lausanne 1953) had done a tremendous amount of good in building up friendship between the R.S.G.B. and other European societies.

I shall never forget the hundreds of autographs scribbled on every conceivable piece of paper or the very "liquid goodbyes" to the many representatives of the other countries present at the Convention! Neither shall I forget the numerous photographs and films which were taken—many of the latter being shown on television.

Before concluding this brief account I must record my appreciation of the many kindnesses I received, from the chief organiser, DL1MJ, and from glider pilot, DL1NW. I also want to thank DL1YL for her constant attention to us all and to DJ1LH and DL9TX and others who acted as interpreters. Lastly my heartiest congratulations to D.A.R.C. President (Herr Rapcka) and his Vice-President (Otfried Luhrs, DL1KV), on a most enjoyable meeting, excellently devised and perfectly organised.

### Region 1 Hamfest

A REGION 1 Hamfest is to be held at the Zoological Gardens, Bellevue, Manchester, on Saturday, October 10th, 1953. Members will assemble from 2 p.m. onwards in readiness for a meeting at 3.30 p.m. The programme will include short speeches by the President and the General Secretary who have accepted an invitation to attend the Hamfest as guests of the Region.

Eight well-known manufacturers have promised to support an exhibition of general interest to members. High tea will be at 5.15 p.m. after which a raffle for some 60 prizes will be drawn. There will be an evening feature at 7 p.m.

Tickets, price 8/6 each, can be obtained from the organiser (J. Simpson, G4JS, 1 Marsh Terrace, Darwen, Lancs.), the R.R., C.R.'s, or T.R.'s.

### South-Western Hamfest

THE Fourth Annual South-Western Hamfest will be held at the "Oswalds" and "Trecarn" Hotels, Babbacombe, Torquay, on October 11, commencing at 12 noon. A full programme has been arranged, including a film show by Donald Aldous. Other events include the Quiz for the Bartlett Cup. Tickets, price 12/6 (including luncheon and tea) may be obtained from F.D. Cawley (G2GM), 1 Littlegate Road, Paignton, Devon.

### Reading Hamfest

THE Annual Hamfest, organised by the Reading Radio Society, will be held this year at the Galleon Cafe, London Street, Reading, on October 11 at 2 p.m. The programme will include a lecture on "U.H.F. Equipment" by D. N. Corfield (G5CD) and a film show. Tickets, price 6/- (including tea), may be obtained from L. A. Hensford, B.E.M. (G2BHS), 30 Boston Avenue, Reading.

### London Members Luncheon Club

JOHNNY HOMMAIRE, F3ES, and his wife, of Strasbourg, Caesere Balbiano, son of I1DBW, of Piedmonte, Italy, and Jack Freeman, ZL2AFB, and his wife, were warmly welcomed at the meeting of the Club held on August 21. All three spoke briefly after the luncheon.

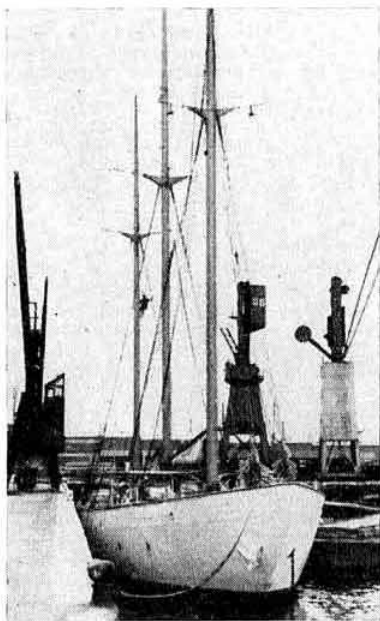
The Chair was taken by the General Secretary in the absence of the Club President (Stanley Vanstone, G2AYC).

The Club will meet again at the Bedford Corner Hotel, Tottenham Court Road, on Friday, September 18, at 12.30 p.m. Reservations to May Gadsden (HOL 7373) prior to the day of the luncheon.



# The Hans Hass Expedition

**M**EMBERS will no doubt have read in their newspapers about the expedition, now on its way to the Caribbean, led by Dr. Hans Hass, the famous German undersea photographer. His ship, the motor yacht *Xarifa*, fitted out in Hamburg, spent a few days in London Docks before sailing on August 29. By kind invitation of Dr. Sommer, DI9AA, the ship's surgeon and operator of the amateur station aboard, the writer was privileged to inspect the ship and its equipment and to meet Dr. Hass, his charming wife and other members of the party.



The motor yacht *Xarifa* moored alongside Berth 29, London Docks, Stepney, on August 28, 1953.

The *Xarifa* is a sleek craft of some 350 tons displacement with both diesel and sail power. It was built originally for Sir Thomas Lipton, and

is beautifully appointed and well adapted for the work which the expedition will carry out—photographing on cine-film, in both monochrome and colour, the multitudinous under-water sea life.

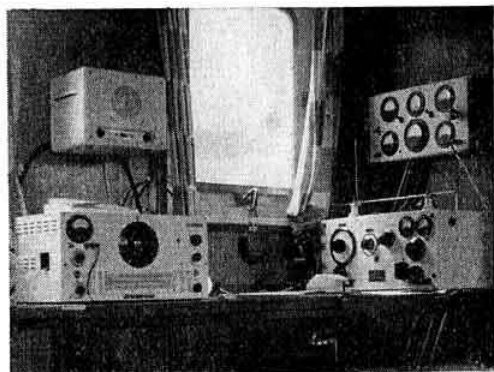
Apart from DI9AA—a call specially allocated by the German Post Office—the ship carries no standard radio equipment, so that this station will be their sole link with the shore. All the apparatus was provided and much of it built by members of D.A.R.C. resident in Hamburg. The transmitter is v.f.o.—p.a. with about 100 Watts input and can operate on the 3.5, 7 and 14 Mc/s bands. A separate 28 Mc/s rig is also being carried. The receiver is a German-built version of the HRO, and the aerials 100 ft. verticals. The entire station operates from the ship's 110 V supply. Both c.w. and 'phone will be employed.

All amateurs are asked to keep a look out for the call DI9AA and to be ready to assist the expedition should the need arise. In general, DI9AA will operate on 3520 and 14030 kc/s c.w. and on 3700 and 14150 kc/s 'phone. Dr. Sommer asks that English-speaking amateurs should not speak too quickly and that they should restrict their Morse speed to around 18 w.p.m. This request is addressed to everyone and it is to be hoped that the widest possible publicity will be given in other Amateur Radio journals.

The ship will spend some months in the Caribbean Sea and will also go to the Galapagos Islands but at no time will operation take place from land, so the station is of no interest to seekers after DXCC.

Here is an opportunity for radio amateurs to be of invaluable assistance to an important scientific experiment, and we trust that should an emergency arise DI9AA will never have to call in vain. We earnestly hope, of course, that all will be well with them and that they will bring back more of the wonderful undersea pictures which have already delighted the eyes of thousands, as well as adding enormously to our knowledge of the ocean bed. Good Luck, *Xarifa*.

(The writer would like to acknowledge the kind help of Michael Allen, son of G8IG, who developed and produced one of the photographs as a special rush job for this issue.) A.O.M.

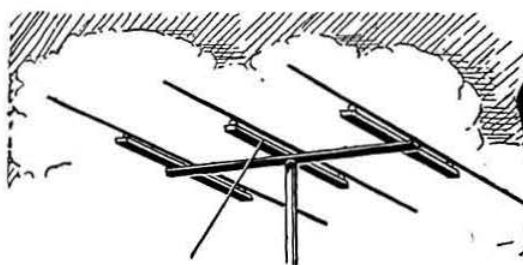


The ship's amateur station DI9AA. The receiver is on the left with the loudspeaker above. The transmitter is on the right.

(Photo by E. Yeomanson, G3IIR)



After a stay of three years in England, Al Rainous, W7OFU, and his wife Gene, recently returned to the U.S.A. In this picture taken at a farewell gathering in Warrington, Lancs., A. Rigby, G3FGI, chairman of the local Society, is presenting a pewter tankard and table centre to Mr. and Mrs. Rainous on behalf of all members. Others in the picture (taken by G. S. Leigh, G2FCV) are S. Allen, G8TR (Vice-Chairman) and G. Richards (Vice-President).



## AROUND THE V.H.F.'s

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

### First G/DL 70 cm Contact

THE first amateur contact between England and Germany on 70 cm took place on August 10 between G2WJ (Great Canfield, Essex) and DL3FM (Essen). Conditions were exceptionally good and a first rate two-way contact was maintained for nearly an hour and a half commencing at 2300 B.S.T.

Starting on c.w. G2WJ soon changed to 'phone but owing to low depth of modulation, which resulted in poor readability, transmissions from the German station were mostly on key. Signals from DL3FM on 70 cm have been heard by both G2WJ and G2FKZ in the past; a recent improvement in the receiver at the German end made the present contact possible.

G2WJ/T has also figured in "DX" working which is reported on page 124 in this issue.

### News from Norway

Chris Amundsen, LA7Y, commenting upon the late June opening which produced the first G/LA 2 m contacts, says that the good conditions appeared to reach only part of the way up Oslo Fjord. LA8RB (Sandefjord, 60 miles south of Oslo) worked dozens of English stations while LB9T (Moss, 40 miles south of Oslo), on July 2, contacted G8OU at 0030 G.M.T., G3GDR at 0105 and G6NB at 2110 G.M.T. These were the only Norwegian stations to work G—those who had contacts with LA8RM will be disappointed to learn that no station of that call is known.

In Oslo LA4VC, LA7Y and LA8AB were active but heard no British stations although LA4VC, who normally signs LB1KB from Larvik, was heard in Belgium and the others had QSOs with Holland, Germany, Denmark and Sweden. In addition to those already mentioned LA1V, 1FA, 2F and 3BC are active in Oslo, 9T in Moss, 7UA and 8ZB in Larvik and 3GC in Mysen (40 miles east of Oslo), mostly from 2000 G.M.T.

### Scottish V.H.F. Group Formed

At a meeting attended by most of those interested in v.h.f. and u.h.f. operation in the Glasgow district it was decided to form the West of Scotland V.H.F. Group with the intention of holding regular meetings to discuss v.h.f. matters and to recruit new stations to 2 m and 70 cm. GM6ZV was appointed Secretary of the Group and GM3DIQ its representative in Ayrshire.

### Progress Report

The Sub-Committees set up by the R.S.G.B. Technical Committee to study certain aspects of technical design on the v.h.f.s and u.h.f.s, and notified in *Around the V.H.F.s* in June last, have made some progress with the problems assigned to them.

The v.f.o. designed by G2IG for operation on

the lower frequency amateur bands has proved entirely satisfactory for frequency control on 2 m and discussions are now in progress for its simplification and possible employment on 70 cm.

Two simple possibilities for the frequency modulation of a crystal oscillator have been explored and proved unsuitable. Investigation is proceeding with a third method which offers some promise of success.

A reflectometer, capable of measurement at 145 and 420 Mc/s, is under construction by G6LL as a necessary preliminary to a study of aerials suitable for these bands.

### Two Metre Skeds

It has been found that provided a sked is kept regularly a surprising number of contacts may be made over really long paths despite conditions being apparently poor as many past reports in these columns have shown. The writer, and doubtless many another operator in the London area, often listens to the 'phone contact at 2300 B.S.T. nightly between G8OU (Ashted, Surrey), and G2BMZ (Torquay, Devon). It is surprising how seldom the Devonian station is unreadable despite the fact that no other signal is audible from his part of the country. G8OU, operating from G4HQ/A (Woodford, Essex) also maintains a lunch hour sked with PE1PL (The Hague) on week days at 1315 B.S.T. G3HBW (Wembley, Middx.) found that over a period of three weeks the Dutch station was always audible, usually at about RST 569.

Another regular long distance 2 m contact which is proving most reliable is that operated by G5YV and ON4BZ at 2300 B.S.T. every evening. For more than two weeks no failure has occurred.

G6VX (Cheltenham, Glos.) who is finding it much harder to get out from his new site than from his old one at Hayes, Kent, is on 145.306 Mc/s every evening at 1900 B.S.T. looking for contacts in the London area and south east England. Despite the considerable barrier of hills in this direction he told G2UJ during a recent contact that he had been able to work London stations every day for a week during which time conditions had ranged from very good to very poor indeed, but only when using a 6-element stack, 30 ft. high, which has proved far superior to a Yagi. In the other direction G6VX puts a first class signal into Dublin, has worked EI2W and been heard on several occasions by GI3GQB (near Belfast) at RS 58/9.

### Other 2 m News

G3HBW (Wembley, Middx.) worked G2BAT and G3AGA, both in Falmouth, on August 5 and 12 respectively at a distance of 240 miles. Most reports show that conditions were rather above average during most of the month but nothing spectacular was achieved. B.R.S.19421 (Whetstone N.20) heard a total of 38 stations between 2220

\* 32 Earls Road, Tunbridge Wells, Kent.

and 0050 B.S.T. on August 8/9 including DL3FM, F9CQ (portable near Dieppe), ON4BZ, ON4HC, ON4HN, OZ9R, PA0EQ and PA0FP. Among the British stations heard recently were G2HP/P (near Sheffield), 3EPW (Bury, Lancs), 5JU (Birmingham), 5SK (Coventry), 5YK (Bristol) and 6XX (Goole, Yorks.), bringing his total for 14 months' listening to 145 stations in 8 countries, all on 'phone. His converter, which employs p.p. 6J6s in both r.f. and mixer stages and a c.c. oscillator is coupled to a BC348 receiver tuning 10.5 to 12.5 Mc/s. The 4-element T-matched Yagi is close spaced and 32 ft. high.

**G6XX** (Goole, Yorks.) has worked EI2W and DL3VJ/P among others. During his holiday, he visited v.h.f. stations in the Midlands, Home Counties and on the South Coast. **G3GEN** (Gloucester) is on again with a new 4-over-4 beam in the roof space. Good results are being obtained on reception but no contacts much over 50 miles have so far been obtained. **G3IUD** (Wilmslow, Cheshire) is operating on both the 144 and 420 Mc/s bands with inputs of 15 and 2 watts respectively, and already has a foot on the Regional Ladder. A CV53 acts as p.a. on the higher frequency band; G2JT and G3A00 were worked in the first week of operation.

#### British Isles Two Metre Zone Plan Map

Copies on stiff card of the Two Metre Zone Plan Map, reproduced on page 122, are available from Headquarters, price 3d. each, or post free 5½d.

In readiness for the R.S.G.B. Second 2 m Field Day **G3WW**, after much burning of the midnight oil, succeeded in building a portable transmitter similar to that made by G3BK and before the contest worked a number of stations with it including G5YV and G6XX. **G2HOP** (near Stamford, Lincs.) has worked ON4BZ and PA0PD. **G3CZY/A** and **3GJZ** are active in Newmarket. **G5MR** (Hythe, Kent) listened for F3LC who was carrying out portable tests as mentioned in the July BULLETIN, but heard nothing. **B.R.S.18989** (Shirley, Birmingham) sends details of 20 stations heard during the month ended August 18 of which G5BM (Cheltenham) and G3BA (Davenport) provided the best signals, bringing his total to 43 stations in 10 countries, all on 'phone. **A.1240** (Sunderland, Co. Durham) is using a BC639A and an Eddystone converter into an i.f./a.f. amplifier comprising two Mullard EF50s, a 6SQ7 and EL32 output but finds the noise level somewhat high. He is looking for an efficient omni-directional aerial as a rotary beam is impracticable at his location.

#### 2 m Report from Ireland

**EI2W** (Dublin) recommenced operation on August 1 with a new 16-element w.s. stack and received encouraging reports of increased signal strength. At 2312 B.S.T. on August 9 contact was made with G5TZ/A in the Isle of Wight with a report of RS58 each way. A similar report was obtained from G3FAN (Ryde, I.O.W.) immediately afterwards. A Cambridge "hat trick" was performed on the following evening when G2PU, 2XV and 3WW were worked in successive contacts. G8OU and GW3ENY have been good signals in Dublin recently. EI2W's total of stations worked on 2 m now stands at 162.

New Irish stations now on the band include EI2A (Co. Meath) 145.2 Mc/s, 3W (Donegal) 145.908, 4E (Co. Kerry), 4N (Co. Clare) 144.13, 5Q (Donegal) 145.00, 7A (Donegal) 145.2 and 9U (Co. Limerick) 144.13 Mc/s.

## Regional V.H.F. Ladder

### TWO METRE BAND

Psn.	Call & Location	Worked		
		Regions	Stations	Countries
1.	G3HBW ..... Wembley, Middx.	10	40	2
2.	G3COP ..... Southampton, Hants.	8	49	2
3.	G6XX ..... Goole, Yorks.	8	43	5
4.	G5MR ..... Hythe, Kent.	7	29	4
5.	G3IUD ..... Wilmslow, Ches.	7	24	2

#### Seventy Centimetres

Activity on 70 cm showed a considerable decrease during the month; in the opinion of **G3ECA** there was less activity than at any time since the band was released. He pays tribute to G5DT for his regular operation but even so 'DT only managed to find 9 stations to work in four weeks.

**G2RD's** activity report for the month ending August 21 includes G2DD, FKZ, HDZ, RD, WJ, 3ECA, FP, GDR, 5CD, DT, RD, 6NF and 8KZ.

On August 9 at about midnight G2XV (Cambridge) was heard at S8/9 on c.w. by **G3HBW** but a test arranged for the next morning was unsuccessful.

#### New American 70 cm. Record

From QST we learn that the 420 Mc/s record in the U.S.A. was raised to 360 miles on June 24, 1953, with a contact between W2QED (Seabrook, N.J.) and W8BFQ (Everett, Ohio).

#### 24 cm Record

Further to the report last month G8DD and G3QC wish to record their appreciation of the assistance they received from the Shropshire Constabulary who gave ready permission for the use of a site adjacent to their station on Cleve Hill, and to the G.P.O. who were equally helpful in allowing an amateur station to operate within one mile of a Government station.

## "VHF QSY"

Following the official adoption of "The British Isles Two-Metre Zone Plan," members who wish to acquire crystals for their own zones, or have crystals for disposal on an exchange basis, are invited to send details for inclusion in this space.

Address requests to "VHF QSY," R.S.G.B. BULLETIN.

#### Crystals Offered

By G3GEN, 113 Stroud Road, Gloucester. 6006, 6008 and 6059 at ½ in. spacing (FT243) and 8000 at ¼ in. spacing.

By G3IUD, "Dorby," King's Road, Wilmslow, Cheshire. 8007.69 kc/s (½ in. spacing), 8090.77 and 6050 kc/s (¼ in. spacing).

By G5UM, Bulls Green, Knebworth, Herts. 8007.69 at ¼ in. spacing.

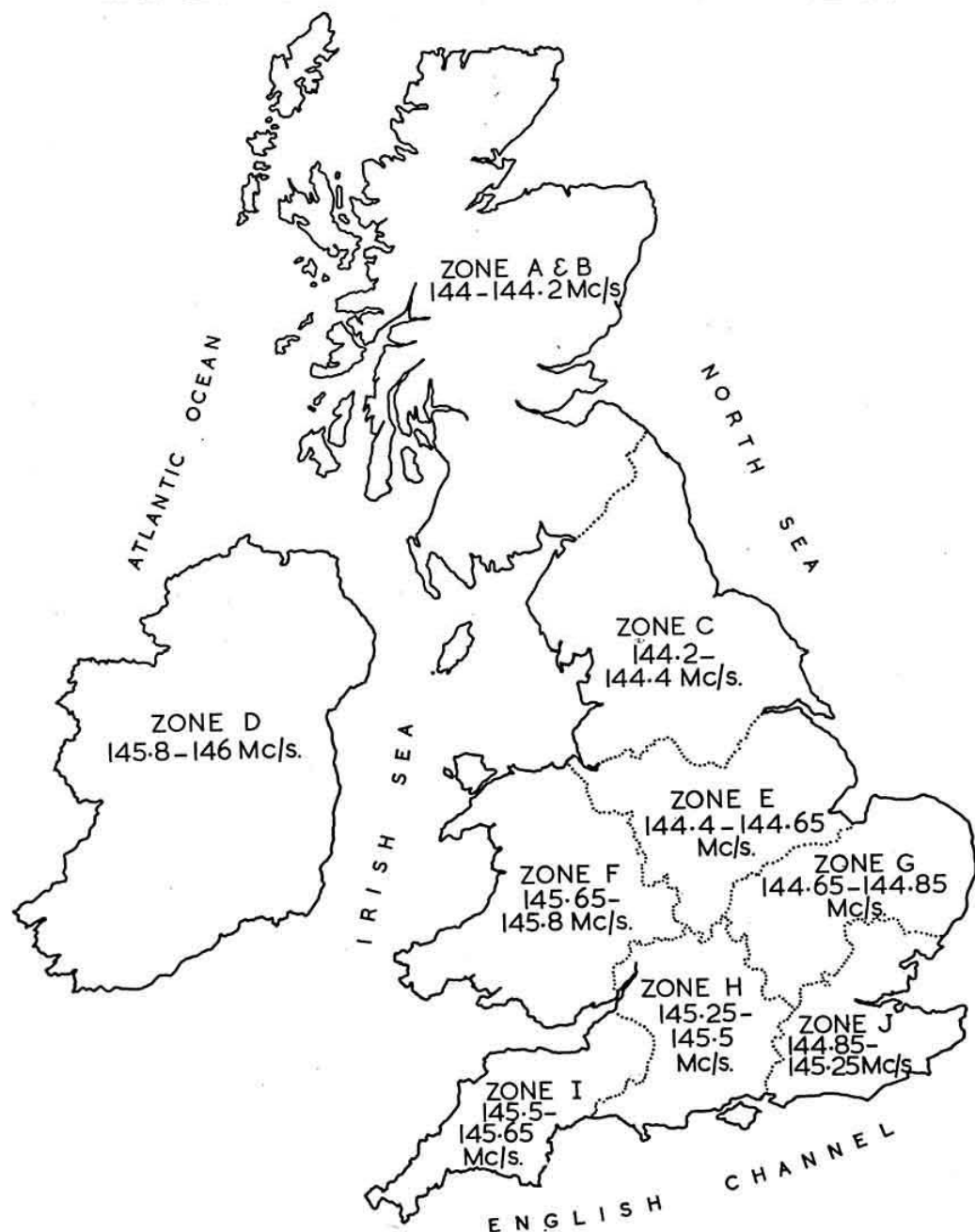
#### Crystals Wanted

By G3GEN, as above, anything between 8069 and 8083 at ½ in. spacing.

By G3IUD, as above, between 8024 and 8036 kc/s, or between 6023 and 6027 kc/s (½ in. or ¼ in. spacing).

By G5UM, as above, anything between 6027 and 6035 or 8036 and 8046, preferably FT243 spacing.

# BRITISH ISLES TWO METRE ZONE PLAN



Zone	Mc/s	Area	Zone	Mc/s	Area
A & B	144. - 144.2	All Scotland.	C	144.65 - 144.85	Bedfordshire, Buckinghamshire, Cambridgeshire, Hertfordshire, Huntingdonshire, Norfolk, Northamptonshire, and Suffolk.
C	144.2 - 144.4	Cumberland, Durham, Lancashire, Northumberland, Westmorland, Yorkshire.	H	145.25 - 145.5	Berkshire, Dorset, Gloucestershire, Hampshire, Oxfordshire and Wiltshire.
D	145.8 - 146.	Ireland.	I	145.5 - 145.65	Cornwall, Devonshire, Somerset and Channel Islands
E	144.4 - 144.65	Cheshire, Derbyshire, Leicestershire, Lincolnshire, Nottinghamshire, Rutland, Staffordshire, Warwickshire.	J	144.85 - 145.25	Essex, Kent, London, Middlesex, Surrey and Sussex.
F	145.65 - 145.8	Herefordshire, Monmouthshire, Shropshire, Worcestershire and all Wales.			



## DX on 1250 Mc/s

**R**AISING the world record on a band on which there is, as yet, very little activity, calls for considerable planning. When G3QC/P (operating from a hill eight miles south of Lancaster) and G8DD/P (at Clee Hill, near Ludlow, Shrops.) attacked their own 24 cm record successfully (as reported briefly in the August issue of the BULLETIN) on July 26, 1953, they did so with equipment designed to be easily transported to difficult sites. The stations were identical, each consisting of three interchangeable units: (i) transceiver, (ii) generator, and (iii) battery. The total weight of each complete station, including the battery, was 80 lbs.

The transmitter and receiver sections are built as transceivers, a single switch operation affecting the changeover from send to receive. The transmitters employ E1368 (CV90) earthed grid triodes as tuned cavity oscillators running at approximately 5 Watts input. The receivers are super-regens. A superhet has been built and tried but its performance is so little better than the super-regen that it did not warrant the increased weight and power consumption. In fact, the signals exchanged were of excellent strength and the units used were quite adequate.

The aeriels employed during the tests were dipoles faced by disc directors and backed by 18 in. diameter paraboloids.

Future plans at both stations include the building of crystal-controlled transmitters and selective superhets.

From their fixed locations, G3QC and G8DD have managed to establish contact across town—a distance of three miles. Nevertheless, they say this QSO was considerably more difficult to achieve than the world record!

Provided a site can be selected which will give a good jumping-off point, there seems no reason why very much greater distances than 100 miles should not be covered by signals of this order of frequency. It can be safely predicted that 1250 Mc/s is another band which possesses great possibilities for future development.

### Technical Service Manuals

**A**S a result of the generosity of a number of members, the following technical service manuals are now available on loan from Headquarters in addition to those listed in the June, 1953, issue of the BULLETIN.

*R.A.F. Equipment*: R.1155.

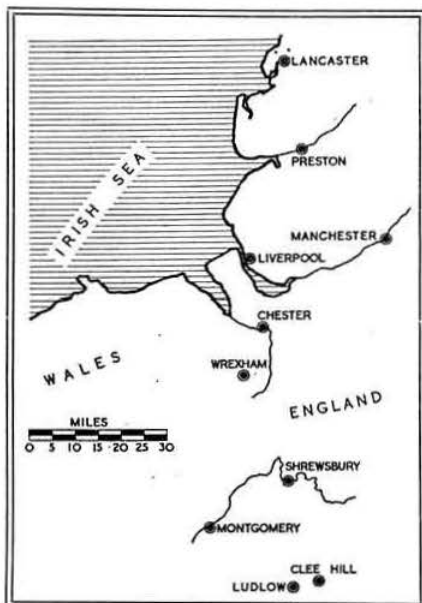
*British Army*: W.S. No. 22, Wireless Remote Control Units D No. 1 and No. 2 Mk. II.

*U.S. Equipment*: Radio Set SCR-300-A, Morse Recorder BC-1016, Code Practice Equipment AN/GGQ-1, Dynamotor R182, Radio Direction Finder Equipment DAE-1, Radio Receiver SLR-F, Transmitter-Receiver Model 350A-1, Long Distance Remote Control Model 350LR, Power Supply Model 350PS-1, Radio Transmitter Model TDB-2, Radio Transmitter ET-8023-D1, Radio Receiver RAK-7, Janette Rotary Converters Types CA and CAF.

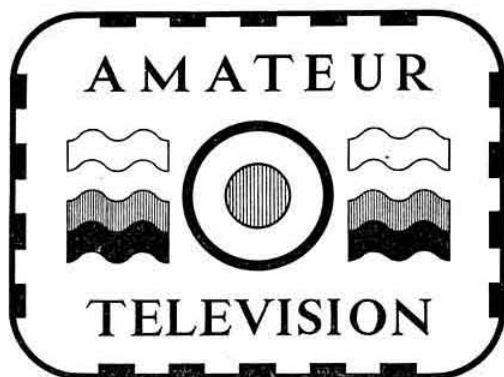
Members in possession of similar manuals which they no longer require are invited to donate them to the Society. In particular, information on British equipment of all types will be most welcome.

Lt.-Col. A. J. A. Schofield, 80 Lower Park Road, Hastings, has offered to answer queries on British and American equipment in so far as he is able. A stamped addressed envelope *must* accompany all requests for information.

R.S.G.B. BULLETIN, September, 1953.



Our pictures show G3QC/P at top, and G8DD/P at bottom of page, with a map of the area over which they established a new world record for the 1250 Mc/s band.



By M. BARLOW (G3CVO)\*

THE main news this month is that pictures from G2WJ/T have been received on numerous occasions by G3GDR at Kings Langley, over a distance of 30 miles. The power used at G2WJ is just 2 Watts, peak white, to a CV53 p.a. The aerial array comprises 8 stacked full waves with a wire netting reflector. Although experiments are still in progress, it would seem that first-class pictures can be received whenever the signal strength is S8-9 or greater. The camera has been in use for some time, but the pulse generating equipment has recently been improved. As soon as this was done, G3GDR was able to lock his receiver via a 70 cm TV converter, details of which it is hoped to publish later. He at once suggested to Jeremy Royle, the op. at G2WJ/T, that he should try the camera. Immediately it was switched on, G3GDR was able to read the time, as seen on a wrist-watch at G2WJ/T.

It is a pleasure to be able to report this news, for it is well known what care Ralph Royle (G2WJ) takes to get his 70 cm equipment operating correctly, handicapped as he is by being 30 miles from the nearest 70 cm station. Those who have visited Dunmow know that his son, Jeremy, is equally painstaking with the vision equipment, and the results and the way they have been achieved reflect great credit on all concerned.

#### Other News

From the Netherlands comes news that the Groningen Group's 70 cm TV transmitter is nearing completion. Freak reception of German and Russian television broadcasts continues to be reported.

The TV camera exhibit built by G3ETI for display at the Electronics Exhibition in Manchester produced excellent pictures. The camera dolly is made of *Dexion* and a large rack made of the same material contains the channel monitor, power supply and waveform generator; this uses phantastron counters and produces a 405 line interlaced picture solidly locked to the mains. Distribution at the Exhibition was via a 67.75 Mc/s signal generator, but a 70 cm transmitter is to be built.

Ian Waters (Ely), who provided the camera and camera control unit (c.c.u.) for the 1952 Amateur Radio Exhibition, has acquired 90 ft. of camera cable and a new 405 line interlaced sync generator. An electronic viewfinder is being added to the camera. A demonstration of this equipment at March (Cambs.) was a great success.

Messrs. Assenheim and Lobb (South London) have both completed 5527 Iconoscope cameras and are getting very good pictures with only 100 Watts

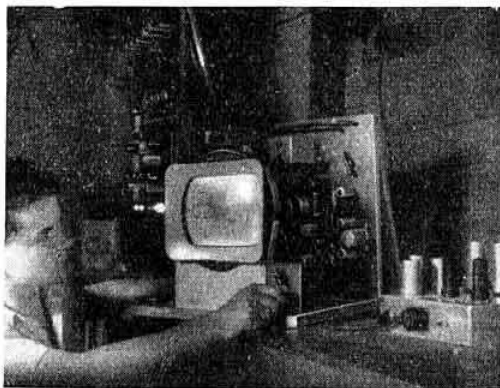
of illumination and an f 3.5 lens. Improvements made by members of the B.A.T.C. (in particular by PA0ZX), have enabled outstanding results to be obtained with this type of camera tube—results which would no doubt astonish our American friends! W. Worthington has almost completed a new 405 line pulse generator which has a built-in waveform monitor, giving test signals of sync only, peak white, sawtooth, staircase, or vertical  $\frac{1}{2}$  micro-second bars. Blocking oscillator counters are used. F. May (Leicester) is progressing from a telestill scanner to a live camera using a reject *Staticon* tube. Incidentally, these tubes will not be available outside the United Kingdom, and delivery has not yet begun.

By the time this issue is published, the Dagenham Show, at which two cameras, telestill equipment, and full sound facilities were planned, will have taken place.

Preparations are now in full swing for the R.S.G.B. Amateur Radio Exhibition where Amateur TV will again be demonstrated.

#### Lecture Tapes

The British Amateur Television Club is producing a series of lecture tapes for the benefit of clubs and individuals. The first, produced on a G.B. Recorder type 732 by C. G. Dixon, is on "Amateur Colour Television" and runs for about 45 minutes. It may be played on any twin-track machine capable of  $7\frac{1}{2}$  in. per second. The lecture covers briefly the various colour processes, their advantages and disadvantages, and describes in detail a 150 line 100 frame 3-colour field-sequential



Jeremy Royle adjusting the monitor at G2WJ/T

camera chain. Much interesting and descriptive detail is included but the material is not highly technical, being aimed at the average radio amateur with no knowledge of either black-and-white or colour television. The lecture concludes with an account of results to date and possible developments, both commercial and amateur.

No charges, apart from postage (which must be prepaid), are made for the loan of the tape which may be borrowed from Mr. Dixon at 23 Wye Street, Ross-on-Wye, Herefordshire.

Reports for inclusion in this feature should reach the author not later than the 20th of the month preceding publication.

#### LONDON MEMBERS' LUNCHEON CLUB

will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, at 12.30 p.m., on September 18th.

Telephone table reservations to HOL 7373 prior to day of luncheon. Visiting amateurs especially welcome.

\*29 Loftin Way, Chelmsford, Essex.

# THE MONTH



BY ARTHUR O. MILNE. G2MI\*

### New Countries

**AUGUST, 1953**, will long be remembered by the DX fraternity as a month when it was possible to work three new countries in which there had been no previous amateur activity: Easter Island (CE0AA), Aldabra Islands (VQ7UU) and Seychelles (VQ9UU). The first was due to the enterprise of CE3AG and the Chilean Navy, while Jim Jamie, the indefatigable globe trotting DX-er, was responsible for the VQ7 and VQ9 contacts. He also worked from CR7, FB8 and VS9, and hopes to go to Yemen in the near future. He has not been to, nor is he likely to go to, CR8 or VS2. It is also unlikely that he will be re-visiting Afghanistan. At the beginning of September he became active again as ST2UU, when time could be spared from filling in QSL cards!

G6YQ reports that CE0AA's final contact was with CE3DG at 1900 G.M.T. on August 15. The writer has seen a sample of the cards which are being sent to confirm contacts.

## The EA9DC Fiasco

Probably no one has disappointed so many people as did the operator of EA9DC who, even after considerable pressure had been brought to bear upon him, declined to send out more than a very small number of cards.

We have now received an official letter from the Secretary-General of the Union de Radio-ficionados Españoles saying that EA9DC has been expelled from membership of that society as from August 5, 1953, for conduct prejudicial to the good name of Spanish radio amateurs. This news will be little consolation to those who have not received his card but it is heartening to know that the practice of literally offering QSLs for sale has been nipped in the bud in so salutary a fashion.

## Notes and News

G3FBN says that VP4LZ will be very active on Top Band during the coming winter, using crystal control on 1776 and possibly 1810 kc/s. Best DX for 'FBN has been ET2P (Roberts Field, Liberia) on 14032. FD4AB (ex-FD8AB) is active on 14 Mc/s. There seems to be some doubt whether L8BD is, in fact, on Christmas Island or on a ship off-shore. G6RH reports working ZP6CR, PY and CE on 21 Mc/s. Although the only aerial available at present is a Zepp '6RH worked VQ7UU, VQ9UU and CE0AA.

B.R.S. 19771 (Worthing) has been hearing CR5NC and 5SP, both on St. Thomas' Island, between 2145 and 2215 G.M.T. daily. He has also heard VQ3RJ, 2000, CE3NN, 2200, HR1AA, 2215, and FP8AA and 8AK (W2BBK) around 2145. TA3US and TA3K are new stations in Turkey. The latter operates air-mobile. The best

'phone signal on 7 Mc/s has been CE4BD (0450 G.M.T.), whilst on c.w. he has logged KP4UV, YV5EQ, ZL2BJ, ZL2LB and 5A1TP. Has anyone had a card from DL2PT, heard working Gs on Top Band?

On 'phone, G8DR has worked HZIAB, 2330 (from whom a batch of cards has just arrived at the Bureau), VP5AR, 2300; ZP5CF, 2310; ST2NW, 0643, while recent contacts on c.w. have been with 3A2AY, 9S4AD, G3AAT/OX, CR7AD, CR7IZ, CE0AA and VO7UU.

B.R.S. 18017 reports hearing the following: ZC3AA, 14040, 0910; AP2K (Quetta), 14003, 715; FQ8AP, 14018, 1620; KB6AY, 14060, 1130; HR1UA, 14085; HK5CR, 14310; DU1AL, 1700; MP4KAC, H16EC and JA0AA (Iwo Jima). Despite conditions, G8FC still manages to work a useful quota of DX stations amongst which have been AP2N, 7032, 2140; CR6CS, 14100, 2135; CR7IZ, 14102, 1800; FK8AB, 14020, 1340; VE8YC, 14014, 0815, and ZD4BN, 14038, 2000.

G3CMH (Yeovil) comments on the prevalence of short skip on 14 Mc/s but says he has found a few KH, KL7 and W7 signals around 0700 G.M.T. KAs can generally be heard about 1300 and Africans between 1800 and 2000. After 2100, conditions are often fairly good for South America. Peak times have recently been 1600 for ZS, 1900 for VQ4, 2030 to 2300 for KV and KZ with the Ws peaking up even later. On 14 Mc/s the DX heard has included CP5EK, 1818; CR5SP, 2108 (QSL via R.S.G.B.); CR6BH, CR6CM, EL9A, ET2LV, 2NX and 2VD (P.O. Box 374, Asmara), ET2ZZ (P.O. Box 379, Asmara) and 15FT (P.O. Box 173, Mogadishu). 21 Mc/s has yielded CE3CZ, EA6AT, EA9AR, FF8AK, FF8GR, HZ1TA, KV4BD, KZ5CP, VQ2DT, VP6MR, YI3WH, ZD1SW, ZD2S, ZD4AE, ZD9AA and several ZS signals. 28 Mc/s has



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

opened occasionally but mainly for short skip, although CN8MM, LU2DX, LU3DBX, LU5DZ and VQ2DT have been heard. 'CMH has received cards from FQ8AD, JA2MB, KA2MB, PJ2CB and VQ8AL.

### Who's Who

FK8AO is now active on 7 Mc/s around 1800 daily and FK8AC, AH and AL will be on the air by the end of the year. F9HE is staying in Switzerland before going to America for a prolonged visit. He has disposed of his equipment and sold his house in Versailles.

E. Stevens, JY1BB, who has QSL'd 100%, is now back in England. His address is 48 Pinecroft Road, Ipswich. Dick McKercher, HZ1MY, has returned to the United States where his address is P.O. Box 185, Perry, Iowa. He hopes to get his old call—W0MLY—reissued.

G3HLS says the address of ISSG is P.O. Box 347, Mogadishu. It is known that a number of cards have gone astray because the box number was not stated. A letter from OD5AJ tells how he has re-established contact with two war-time friends, G3AWZ and G3FRB. He uses dipoles 80 ft. high for each band and wants contacts with British stations.

### Comment from Malaya

Wally Blanchard, VS1EV, states that there are twenty-six active VS1 stations and three ZC5s. He says it seems that only amateurs observe the Atlantic City Convention! Radio Peking operates on 14216, the B.B.C. on 7120 and 7125, and Radio Pakistan, despite repeated protests, still transmits its abortive "Goodwill" programme to the U.K. on 7010. There is a s.s.b. station in Karachi on 14210 while FOD, believed to be in Viet-Nam, is on 14030. An Indonesian radio-telephone station

has slowly drifted from 14100 to 14180 kc/s and at this rate should drift out at the h.f. end around mid-1955! It is a pity that some commercials cannot at least approach the technical standards observed by amateurs. His final complaint, with which we concur, concerns the abuse of amateur privileges by Americans who operate traffic nets. To do this in foreign countries which are good enough to allow them to transmit is likely to do Amateur Radio, as we understand it, incalculable harm.

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Reports for this feature, which will be most welcome, should arrive not later than the 25th of the month preceding publication.

### LONDON U.H.F. GROUP

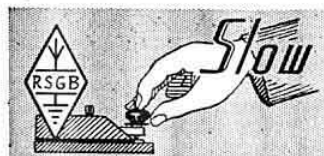
will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, at 7.30 p.m. on October 1. All u.h.f. enthusiasts welcome.

### Instruction Courses for the R.A.E.

A COURSE of instruction for the Radio Amateurs' Examination, including the Morse Test, will be given on Monday evenings, commencing September 28, at Grafton School, Eburne Road, London, N.7. The lecturer will be A. Perry (G3DKX). Applications for enrolment should be made in the first instance to A. W. H. Wennell (G2CJN), 145 Uxendon Hill, Wembley Park, Middlesex.

### Can You Help?

T. H. Wright (G3CLO), 59 Bury Green Road, Cheshunt, Herts., who is anxious to obtain details of the Type 58 Set walkie-talkie. He particularly requires information on the power pack, the meter switching circuits and the built-in crystal calibrator.



\* Each station will operate in turn.

## Slow Morse Practice Transmissions

The following slow Morse transmissions, sponsored by the Society, are intended to assist those who aspire to obtain an amateur transmitting licence. More volunteers are still required for parts of the British Isles not already covered, particularly in the London Area. Stations listed who find themselves unable to continue transmissions should immediately notify the organiser, Mr. C. H. L. Edwards, A.M.I.E.E. (C8TL), 10 Chepstow Crescent, Newbury Park, Ilford, Essex.

Local Time	Call	kc/s	Town	Local Time	Call	kc/s	Town
<b>Sundays</b>				<b>Wednesdays</b>			
09.00	G3LP	1850	Cheltenham	19.00	G3GZA	1837.5	Bristol
09.30	G3BKE	1900	Newcastle-on-Tyne	22.00	G3DLG	1800	Grays, Essex
10.00	G6MH	1990	Southend-on-Sea	22.00	G3HYN	1850	Cambridge, Glos.
10.30	G3GIO	1915	Guildford	22.00	G3GIO	1915	Guildford
	G3CYS	1990	Pontefract	22.00	G2BND	1918	Dalston
	G3ESP			22.45	GM3GUS	1800	Dunfermline
	G3HCX						
10.30 *	G3HNC			<b>Thursdays</b>			
	G3IDT			19.00	G3NC	1825	Swindon
	G3US			20.00	G3FVH	1920	Hull, Yorks
11.00	G2FXA	1900	Stockton-on-Tees	21.30	G3ICX	1915	Sutton Coldfield
11.00	G3GZA	1837.5	Bristol	22.00	G3GIO	1915	Guildford
12.00	G15UR	1860	Belfast	22.00	G3IFX	1910	Derby
14.00	G5AM	1900	Witnesham, Ipswich	22.30	G3OB	1803	Manchester
21.00	G2FIX	1812	Nr. Salisbury	22.30	G3ADZ	1940	Southsea
<b>Mondays</b>				23.00 *	G3LA	1915	Brentwood
19.00	G3NC	1825	Swindon		G4AK		
21.00	G3BLN	1900	Bournemouth	<b>Fridays</b>			
22.00	G3GIO	1915	Guildford	19.00	G3BLN	1900	Bournemouth
22.15	G2BRH	1900	Ilford	20.00	G3CSG	1870	Wirral
22.30	G8TL	1900	Ilford	22.00	G3GIO	1915	Guildford
<b>Tuesdays</b>				<b>Saturdays</b>			
18.30	G2FXA	1900	Stockton-on-Tees	13.00	G2FXA	1900	Stockton-on-Tees
19.00	G3IBL	1883	Derby	22.00	G3GIO	1915	Guildford
21.00	G3EFA	1855	Southport				
22.00	G3GIO	1915	Guildford				

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



# Tests and Contests

## The B.E.R.U. Contest, 1953

THE Sixteenth B.E.R.U. Contest was the final "fling" of the 1952-3 DX season and almost everyone seemed to be on the air to take advantage of it. For most members, this evergreen contest still holds pride of place, despite the tendency in recent years for it to be overshadowed by National Field Day. Correspondence shows that the event is eagerly awaited throughout the Empire, and the number of entries represents only a small proportion of the stations actually taking part.

### Senior Telephony

Pn.	Call	QSO	Pts.	Pn.	Call	QSO	Pts.
1	VQ4AQ *	258	2299	41	VSIFE	58	681
2	DL2RO	198	2102	42	G2QT	50	667
3	ZS2A	207	2099	43	VEIIM	58	642
4	V89AP	216	2081	44	GM3CIX	45	609
5	VE3KE	144	1614	45	VE5QZ	47	600
6	VE7VO	142	1548	46	G5JU	45	598
7	G5RI	126	1535	47	VE3WY	50	597
8	VK2ANN	155	1480	48	G6XY	45	577
9	G6GN	107	1433	49	G5MR	40	538
10	ZS2HI	119	1396	50	G8KS	38	518
11	ZL2FA	116	1283	51	G8DF	38	514
12	ZL3JA	108	1248	52	G3GFG	37	509
13	G5WP	93	1239	53	G5KZ	35	469
14	VK3XK	108	1205	54	ZS6BJ	50	467
15	GM2FHH	89	1148	55	VK4FT	48	462
16	G5PO	91	1143	56	ZL2MM	40	462
17	VK2AWU *	99	1090	57	ZS5LA	34	457
18	ZL1AH	93	1085	58	G3DBJ	35	453
19	VE2BK	100	1047	59	VK2PV	41	436
20	ZS6BT	89	1015	60	ZL3GR	33	424
21	VPS5C	93	957	61	GM3EOJ	36	422
22	VK5FO	88	955	62	VEIOM	31	397
23	VK3XB	104	930	63	G2BW	29	393
24	G6BS	73	926	64	V56AE	29	390
25	VQ2GW	69	915	65	G2BVN	29	383
26	VE2WA	86	893	66	VK3CX	32	364
27	ZL1HY	68	879	67	VEIHG	27	361
28	V56CG	78	877	68	VEIYB	25	350
29	G8PB	65	834	69	G2AJB	24	348
30	VE1EK *	88	856	70	G3GWO	26	338
31	ZL1AIX	75	832	71	VE3LJ	26	318
32	G3FXB	60	787	72	VO1D	22	297
33	VK3ANJ	65	764	73	ZL1QW	18	284
34	G3BTU	61	759	74	G2YS	19	267
35	G3EBH	57	756	75	VE2OL	17	240
36	G3RB	60	739	76	G5IV	14	199
37	VE2KZ	53	707	77	G8KU	18	197
38	ZL3AB	54	689	78	VK2HZ	16	192
39	VQ4BY	50	682	79	VE1CU	13	186
40	G3BDQ	58	681	80	G6NA	10	138

\* Zone Awards.

Check logs were received from VS6AJ, MP4BBE, ZS6DZ, VK3YU, VK5RX, ZS1BM, GW3FSP, G3DO, G2UX, VE1AE, G6CJ, ZL1MQ, G3CXM, G3EEM, G14RY, ZL3GQ, VQ4RF.

### Winners

This year, G. J. Dent, VQ4AQ, excelled himself by carrying off both the Senior Telephony and Telephony awards. To him, and also to Jac Van Wyk, ZS6R, the winner of the Junior event for the third year in succession, we offer our warmest congratulations. Second and third places in the Senior Telephony section were taken by Jack Drudge-Coates, DL2RO, and R. G. Henwick,

### Junior Telephony

Pn.	Call	QSO	Pts.	Pn.	Call	QSO	Pts.
1	ZS6R	127	1508	13	GW3AHN *	45	559
2	VE1BV	191	1390	14	VS1ER	45	531
3	VU2JP	115	1207	15	V06N	52	498
4	MD5XZ *	139	1199	16	VQ5AU	49	483
5	ST2AR	130	1181	17	ST2HK	36	456
6	VK2GW	95	1039	18	VPIAA	31	434
7	ZD2DCP	83	1001	19	VK5WO	33	399
8	ZC4XP	107	964	20	G5MP	27	367
9	SA2CA	87	847	21	G5ND	25	327
10	V57XG	62	805	22	G3EPO	7	102
11	VK3RJ	79	786	23	G3ETP	4	58
12	ZB2I	152	737				

\* Zone Awards.

ZS2A, and by C. S. Taylor, VE1BV, and J. S. Nicholson, VU2JP, in the Junior Telephony. African stations were clearly in the lead in the Telephony section, for in addition to VQ4AQ, Dave Taylor, VQ2DT, and Roy Featherstone, VQ4RF, were second and third respectively.

"Dud" Charman, G6CJ, a veteran B.E.R.U. contestant, spent some months analysing past results in order to devise a scoring system which would be fair to all in the present years of poor conditions. How well he has succeeded is shown

### Telephony

Pn.	Call	QSO	Pts.	Pn.	Call	QSO	Pts.
1	VQ4AQ	203	2079	12	ZL1MQ	36	380
2	VQ2DT	156	1538	13	ZL1HY	28	373
3	VQ4RF	134	1476	14	VQ4BY	28	342
4	G2DPZ	104	1130	15	G3XC	26	339
5	ZL1AIX	85	630	16	G5DF	23	293
6	VS1ES	51	581	17	DL2RO	16	220
7	VK3XK	47	538	18	VE2CK	16	170
8	G3DO	39	498	19	VE1YB	7	103
9	VU2JP	34	415	20	VK5WO	4	59
10	G8SC	30	401	21	VE1CU	2	29
11	G6BS	31	387				

Check logs were received from GW3FSP, ZS6AFW, MB9BJ, ZS6ZT, ZD2S.

by the results, the first eight places all falling to different call areas. His rearrangement of Zones was welcomed by most competitors, particularly by those in South Africa, Australia and New Zealand where openings for DX were few.

Most contacts were confined to the 14 Mc/s band although 7 and 21 Mc/s provided a useful source of points especially between Africa and Europe; 3.5 Mc/s produced a few VE/G QSOs but conditions were not good. Several stations established contact on three bands but 28 Mc/s was completely "dead."

### Receiving Telephony

Posn.	Name	Pts.
1	A. R. Gilding Ex-G3GPZ	1701
2	J. L. Hall B.R.S.19107	1380
3	J. Burgess B.R.S.19804	1241
4	E. W. Trebilcock B.E.R.S.195	961
5	E. F. Jones G3EUE	436

### Receiving Telephony

Posn.	Name	Pts.
1	I. S. Davies A1182	528
2	N. J. Barnacle B.R.S.18989	425
3	E. W. Trebilcock B.E.R.S.195	275
4	E. Langley ZSL2EL	244

### The Rules

The strongest criticism was directed against the "local 12 noon starting time" rule while the "24 of 36 hours" duration rule also met with a very mixed reception, the majority of contestants being in favour of a set period.

The receiving contests were poorly supported, despite the regular complaint that the non-transmitting amateur is neglected. In these contests there was some misinterpretation of the rule governing bonus points.

### Thanks

The Contests Committee thanks all those who sent in check logs and letters. It has not been possible to reply to all correspondence yet, but it is hoped to answer each letter individually in the near future and to send each entrant a copy of the Rules for the 1954 Contest which will be held during the week-end of January 30-31. Keep the dates clear!

### First Two Metre Field Day, 1953

**C**ONDITIONS for this event were again only fair although there were reports of good openings in some parts of the country. Lack of activity probably accounts for the low scores. The DX worked was not as great as on the previous occasion, the 236 mile contact between G6XM/P and G3HVO (Poole, Dorset) being the best achieved.

The winners were the Northampton Short Wave Radio Club using the club call-sign G3GWB/P. The station, at Honey Hill, Cold Ashby, was operated by G3GHO, G3IAI and G2HCG who was the winner of the Second Two Metre Field Day in 1952. The Club used four stacked skeleton slots with reflectors and scored their 210 points with 91 contacts, 11 of which were over distances of more than 100 miles.

Runner-up was G3BEX/P (at Devil's Dyke, near Brighton) who used a 12 element aerial system. Among his 62 contacts he had four over 200 miles. Third place was taken by G6XM/P who operated from Garrowby Hill, Yorkshire. He collected 181 points from only 44 QSOs, one of which was the 236 mile contact referred to previously.

Posn.	Station	Portable QTH	Points
1	G3GWB/P	Honey Hill, Northants.	210
2	G3BEX/P	Brighton, Sussex.	183
3	G6XM/P	Garrowby Hill, Yorks.	181
4	{GW5MA/P	Bladenavon, Mon.	180
	G3APY/P	Leek, Staffs.	180
6	G3ABA/P	Meriden, Nr. Coventry.	176
*	G3MA/P	Granhams, Glos.	106
7	{G4JJ/P	Barnsley, Yorks.	99
	G8QY/P	Ilmington, Glos.	99
9	G3XC/P	Bledlow Ridge, Oxon.	97
10	G3CFB/P	Coleshill, Bucks.	85
11	G3WW/P	Cheltenham, Glos.	75
12	G3AGS/P	Rochdale, Lancs.	72
13	G3FD/P	Dunstable, Beds.	62
14	G2HCJ/P	Frodsham, Ches.	61
↑	G5ML/P	Nr. Birmingham, Warks.	59
15	G3HSD/P	Nr. Bristol, Glos.	57
16	G4BP/P	Scarborough, Yorks.	55
17	G6XX/P	Beverly, Yorks.	48
18	GM3EGW/P	Reston, Berwick.	36
19	G3FRG/P	Storrington, Sussex.	29
20	G3ION/P	Stroud, Glos.	28
21	GW4CG/P	Tondu, Glam.	26
22	G2BAT/P	St. Agnes, Cornwall.	24
23	G5MP/P	Dover, Kent.	22
*	G3GOP/P	Southampton, Hants.	22
24	G3FKO/P	Bath, Somerset.	15

\* *Disqualified—No declaration.*

† *Disqualified—Entry postmarked late.*

### Comments

Most competitors seem to have enjoyed the day despite the bad weather. The only criticism concerned the close proximity between the dates for N.F.D. and the 2m event. This was unfortunate but could not be avoided as the Council decided that National Field Day should take place one week later than originally intended in order to avoid Coronation weekend.

All those who sent comments are thanked for their interest including G2DHV who forwarded the only check log received.

## Direction Finding Field Days

TEN of the fourteen teams which took part in the Rugby/Slade Qualifying D/F Field Day Event on August 16 located the hidden transmitter which was concealed in a nettle clump just over 10 miles from the start. A half-wave aerial was used and strong signals on the first transmission deceived several contestants. Competitors received no help from the main roads which inconveniently ran at right angles to the desired direction.

G. T. Peck was the first to arrive, at 1527 B.S.T., despite having chosen a "back door" route which necessitated some hill climbing! He was closely

followed by J. A. Walley at 1529; C. H. Young at 1530 and P. N. Prior at 1535. The arrival times of the other parties were as follows: G. C. Simmonds, 1543; P. J. Evans, 1550; J. Frings, 1601; C. N. Smart, 1603; N. B. Simmonds, 1610; and T. C. Reynolds, 1623. As C. H. Young had qualified in a previous event, Messrs. Peck, Walley and Prior qualified for the National Final.

After the event forty-three competitors and crew members assembled at Warwick for tea during which prizes, donated by the B.T.H. Rugby Recreation Club Radio Section, were presented to the first two competitors.

### D/F National Final, 1953

**T**HOSE members who have qualified to participate in the National Final, to be held on September 27, will be supplied with full details individually by post as soon as possible.

### Low Power Contest, 1953

THE rules have been altered along the lines suggested in the Report of the 1952 event.

## Rules

1. The Contest is open to all fully paid-up Corporate members of the Society resident in Europe.

2. The Contest will run from 1800 G.M.T. to 2330 G.M.T. on Saturday, October 3, 1953 and from 0800 G.M.T. to 2330 G.M.T. on Sunday, October 4, 1953.

3. Entries will only be accepted if submitted in the form set out below :

### Low Power Contest, October 3-4, 1953

Call Sign..... Claimed Score.....

Code number .....

Name .....

Address .....

Transmitter ..... Aerials ..... Receiver .....

G.M.T.	Power	Call Sign of Station Worked	My Report on his Signals	His Report on my Signals	Points claimed	Code No. of station worked

Total points

4. Full circuit details of the transmitter and power supply must be given on a separate sheet, signed by the competitor.

5. All contacts must be made between 3500 and 3600 kc/s.

6. The power input to the transmitter shall not be intentionally varied during any contact.

7. The contest is confined to two-way telegraphy (A1) contacts and any competitor receiving tone reports lower than T8 may be disqualified.

8. Only one contact with a specific station will be allowed to count for points.

9. Power input, in watts to the p.a. stage, must be recorded in the second column at the time of the contact.

10. No preceding stage may have a power input in excess of that to the p.a.

11. Scoring will be as follows :

Watts input to the p.a. stage ..	Up to 0.5	To 1	To 2	To 3	To 4	To 5
Points per contact	20	10	5	3	2	1

12. If different power is used at various times during the contest, the scoring must be altered accordingly.

13. Competitors must call "CQ CQ CQ QRP de (call sign) AR."

14. An exchange of RST and Code Number—both of which must be acknowledged by the signal R—will be required before points may be claimed (e.g. RST 579 NR 17). Where

non-competitors do not give a Code Number, this may be inserted, provided this fact is indicated on the log sheet.

15. Proof of contact may be required.

16. Contacts with unlicensed stations will not count for points.

17. Only the competitor may operate the station during the contest period.

18. Entries should be addressed to the Hon. Secretary, R.S.G.B. Contests Committee, New Ruskin House, Little Russell Street, W.C.1 and should bear a postmark not later than Friday, October 16, 1953.

## Code Numbers

A list of Code Numbers is set out below.

### ENGLAND (G).

1. Bedford	15. Hereford	28. Nottingham
2. Berkshire	16. Hertford	29. Oxford
3. Bucks	17. Huntingdon	30. Rutland
4. Cambridge	18. Kent	31. Shropshire
5. Cheshire	19. Lancashire	32. Somerset
6. Cornwall	20. Leicester	33. Stafford
7. Cumberland	21. Lincoln	34. Suffolk
8. Derby	22. London (Postal Districts)	35. Surrey
9. Devon	23. Middlesex	36. Sussex
10. Dorset	24. Monmouth	37. Warwick
11. Durham	25. Norfolk	38. Westmorland
12. Essex	26. Northampton	39. Wiltshire
13. Gloucester	27. N'thumberl'd	40. Worcester
14. Hampshire		41. Yorkshire

### SCOTLAND (GM).

42. Aberdeen	54. Fife	66. Renfrew
43. Angus	55. Inverness	67. Ross & Cromarty
44. Argyll	56. Kincardine	68. Roxburgh
45. Ayr	57. Kinross	69. Selkirk
46. Banff	58. Kirkcudbright	70. Shetland
47. Berwick	59. Lanark	71. Stirling
48. Bute	60. Mid-Lothian	72. Sutherland
49. Caithness	61. Moray	73. West Lothian
50. Clackmannan	62. Nairn	74. Wigtown
51. Dumbarton	63. Orkney	
52. Dumfries	64. Peebles	
53. East Lothian	65. Perth	

### WALES (GW).

75. Anglesey	79. Carnarvon	83. Merioneth
76. Brecknock	80. Denbigh	84. Montgomery
77. Cardigan	81. Flint	85. Pembroke
78. Carmarthen	82. Glamorgan	86. Radnor

### NORTHERN IRELAND (GI).

87. Antrim	89. Down	91. Londonderry
88. Armagh	90. Fermanagh	92. Tyrone

### CHANNEL ISLANDS (GC).

93. Alderney	95. Jersey	96. Sark
94. Guernsey		

### 97. ISLE OF MAN (GD).

### 98. ALL EUROPE OUTSIDE THE UNITED KINGDOM.

## CQ Contest, 1952

THE results of the 1952 World-Wide DX Contest, sponsored by CQ Magazine, have now been published. Leslie Viney, G2VD, the leading English station in the All Bands section, worked 115 countries to produce a score of 69,280 points. Runner-up was A. J. Slater, G3FXB (110 countries, 67,425 points). In the 3.5 Mc/s section, B. W. F. Mainprize, G5MP, was first with 6,725 points, and G2VD (3,696 points) second. The latter headed the English entry on 7 Mc/s with 5,246 points, G3FXB again being his runner-up with 3,990 points.

On 14 Mc/s Tom Martin, G2LB, scored 71,526 points, giving him a very handsome lead over G3FXB, second with 10,192 points. G3FXB was first and G2VD second on 21 Mc/s with scores of 1,968 and 1,534 points respectively. L. C. Snowden, G2BW, worked 5 countries to score 120 points in the 28 Mc/s section.

In Northern Ireland, GI5HZ scored 1,350 points on 21 Mc/s while Ian Hamilton GM3CSM was the leading Scottish station in the All Bands section with 18,879 points. The leading Welsh station was GW3JJ who was first in the All Bands (32,623 points), 3.5 Mc/s (969 points) and 7 Mc/s (7,368 points) sections. On 14 Mc/s C. J. Oliver, GW5SL, was the leading station with 14,940 points.

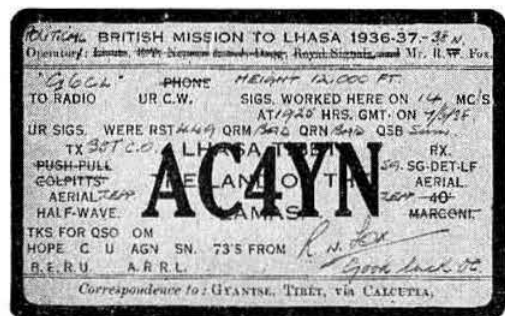
R.S.G.B. BULLETIN, September, 1953.

## Reg Fox—AC4YN

FROM QST we learn, with much sorrow, of the death on June 4 last, of Reg Fox, AC4YN. An almost legendary figure in Amateur Radio circles, Reg was one of three members of a British Political Mission sent to Lhasa during the late 1930's. The others were Lt. E. Y. (now Lt.-Col. Sir Evan) Nepean, G5YN, and Lt. S. J. Dagg, both of Royal Signals.

When Lt. Nepean and his colleague returned to England, Reg Fox settled down in earnest to put "The Land of the Lamas" on the Amateur Radio map. From his station in Lhasa, situated 12,000 feet above sea level, he gave many of us our first QSO with Tibet.

After the war Reg became active again on 14 Mc/s, but no post-war contacts with that far-off land could compare with the thrill which came to those who were lucky enough to add a card from AC4YN to their pre-war collection of DX cards.



A pre-war card from AC4YN.

Just before the war Reg sent to the present writer a unique collection of photographs which he had been privileged to take during the Tibetan New Year Ceremonies—an indication of the esteem with which he was even then held by the Regent and his advisers. (The Dalai Lama was then only a baby.)

Prior to the Communist occupation of Tibet, Reg Fox was the personal radio operator to the Dalai Lama and was in charge of the country's communications. He was married to a Tibetan and was living at the time of his death with her and their four children near Kalimpong, India. It was from there that he organised a radio school.

His many letters to R.S.G.B. Headquarters—cheerful and ever optimistic—at no time disclosed the fact that he was a victim of an arthritic condition which had laid siege to his health over many years.

The call of AC4YN is silent, but the name of Reg Fox will linger long in the memories of many of us.

J.C.

## Contests Diary

1953/4

September 27	D.F. National Final*
October 3-4	Low Power (see page 128)
November 7-8	"Top Band" (No. 2)
January 30-31, 1954	B.E.R.U. (see page 132)

\* For rules, see page 400, R.S.G.B. Bulletin, March, 1953.

# Representation 1954-5

## Regional Representatives

THE undermentioned Corporate Members have accepted an invitation from the Council to serve, if elected, in the office of Regional Representative:—

- Region 1.—B. O'Brien, G2AMV.
- Region 2.—C. A. Sharp, G6KU.
- Region 5.—W. J. Ridley, G2AJF.
- Region 6.—H. G. Hunt, G3ECV.
- Region 7.—F. G. Lambeth, G2AIW.
- Region 8.—R. J. Donald, G3DJD.
- Region 9.—H. A. Bartlett, G5QA.
- Region 10.—J. Banner, GW3ZV.
- Region 11.—F. G. Southworth, GW2CCU.
- Region 12.—J. Douglas, GM2CAS.
- Region 14.—D. R. Macadie, GM6MD.

Messrs. J. N. Walker, G5JU, W. H. Matthews, G2CD, W. Baker, G3AFL, S. H. Foster, G13GAL, were invited but could not accept nomination.

The Council is making no nomination at present in respect to Regions 3, 4, 13 and 15.

Not later than October 31st next, any five Corporate Members resident in a particular Region may nominate any other duly qualified Corporate Member resident in that Region for the office of Regional Representative, by delivering their nomination in writing to the General Secretary, together with the written consent of such person to accept office if elected. Each such nominator shall be debarred from nominating any other person for the current election of Regional Representatives.

## Town and Area Representatives

Not later than October 31st next, any five Corporate Members resident in a particular Town or Area may nominate any duly qualified Corporate Member resident in the particular Town or Area for the office of Town or Area Representative, by delivering their nomination in writing to the General Secretary, together with the written consent of such person to accept office if elected.

In the case of the City and County of London, Area Representatives may be nominated for groups of Postal Districts.

In the case of certain other large towns, Area Representatives may be nominated on a geographical basis, viz. North Birmingham, South-East Manchester.

Town or Area Representatives will only be confirmed in their appointment if the total membership in the Town or Area they propose to represent is in excess of 10.

## Period of Office

Regional, Town and Area Representatives will hold office for a period of two years as from January 1st, 1954, subject to any revision that might be necessary in the light of alterations to the Society's Articles of Association.

## Vacancies

In the event of no nomination being received prior to November 1st, 1953, from the Corporate Members resident in any Region, Town or Area, the Council reserves the right to make an appointment.

## Ballots

In the event of more than one person being nominated for a particular office a Ballot will be conducted, details of which will be published in the November, 1953, issue of the R.S.G.B. BULLETIN.

## Resignations

If for any reason an elected Representative

wishes to resign his office he should notify Headquarters who will advertise the vacancy. **Local Members cannot automatically appoint another member to undertake the duties of a Representative who has resigned.**

The Council reserves the right to call upon any Representative to resign his office if, in their opinion, he is considered to be unsuitable or unsatisfactory.

## Regions

The following is a list of the Regions and Counties or Areas forming them:

**Region 1 (North Western).**—Cheshire, Cumberland, Lancashire (East), Lancashire (West) and the Isle of Man, Westmorland.

**Region 2 (North Eastern).**—Durham, Northumberland, Yorkshire (East), Yorkshire (North), Yorkshire (West).

**Region 3 (West Midlands).**—Herefordshire, Shropshire, Staffordshire, Warwickshire, Worcestershire.

**Region 4 (East Midlands).**—Derbyshire, Leicestershire and Rutland, Lincolnshire, Northamptonshire, Nottinghamshire.

**Region 5 (Eastern).**—Bedfordshire, Cambridgeshire, Essex (outside London Region), Hertfordshire (outside London Region), Huntingdonshire, Norfolk, Suffolk.

**Region 6 (South Central).**—Berkshire (outside London Region), Buckinghamshire (outside London Region), Gloucestershire (excluding the Bristol Area), Hampshire, Oxfordshire, Wiltshire.

**Region 7 (London).**—London North, London South, London East, London West.

Note: The London Region covers the whole of Surrey and all territory within 25 miles radius of Charing Cross.

**Region 8 (South Eastern).**—Kent (outside London Region), Sussex.

**Region 9 (South Western).**—Bristol, Cornwall, Devon, Dorset, Somerset.

**Region 10 (South Wales).**—Brecknockshire, Carmarthenshire, Pembrokeshire and Cardiganshire, Glamorganshire, Monmouthshire and Radnorshire.

**Region 11 (North Wales).**—Anglesey, Caernarvonshire, Denbigh, Flintshire, Merionethshire and Montgomeryshire.

**Region 12 (North Scotland).**—Aberdeenshire, Banffshire and Kincardineshire, Angus and Perthshire, Morayshire, Nairnshire, Inverness-shire, Ross-shire, Sutherland, Caithness, Orkney and Shetland.

**Region 13 (East Scotland).**—Berwick, Peebles, Roxburgh and Selkirk, East, Mid- and West Lothian, Fifeshire and Kinross.

**Region 14 (West Scotland).**—Argyll and Dumbarton, Ayrshire, Bute, Kirkcudbright and Wigtown, Clackmannan and Stirlingshire, City of Glasgow Postal Districts, Lanarkshire, Renfrewshire.

**Region 15 (Northern Ireland).**—Antrim, Armagh, Down, Fermanagh, Londonderry, Tyrone.

## Local Societies

It is not permissible for local societies, whether affiliated to the R.S.G.B. or not, to nominate members to serve as R.S.G.B. Representatives.

## Present Representatives

All present Regional, Town and Area Representatives go out of office on December 31st, 1953.

R.S.G.B. BULLETIN, September, 1953.



## 17th B.E.R.U. Contest, 1954

**I**MMEDIATELY upon completion of the checking of the 1953 B.E.R.U. Contest—the results of which are published on page 127 of this issue—the Contests Committee considered the rules for the 1954 Event, and they are given below. These have been prepared after careful perusal of the comments and letters which were received with the 1953 entries, and after noting the effect of the changes which were made for the 1953 event.

As a result of this examination the following main points emerge: (a) the Telephony Section—after several years' trial—does not enjoy sufficient support to warrant its continuance; (b) the Contest should take place earlier in the year; (c) the introduction of a 36-hour period from which each entrant could choose 24 hours to his liking was unpopular and undesirable; (d) the scoring system

for the Receiving Section should be simplified.

It will be seen that these points have been dealt with and the sub-division of the U.K. stations into three zones for contestants outside the United Kingdom has been slightly modified so that it may better achieve its original purpose.

Competitors should conform, as far as their licences permit, with the R.S.G.B. Band Plan, viz: 3,500—3,600 kc/s; 7,000—7,300 kc/s; 14,000—14,350 kc/s; 21,000—21,450 kc/s; 28,000—29,700 kc/s.

Finally, remember that a hundred well-chosen contacts will bring a leading score and careful adherence to the rules—particularly in the completion of entry forms—will save the Contests Committee much unnecessary work!

Good Hunting and Good Luck!

### Rules: Transmitting Contests

1. The event will be divided into two Telegraphy Sections, namely:—

- (a) Senior (Maximum licensed power).
- (b) Junior (Maximum input 25 Watts).

2. The event (Senior and Junior) will take place from 0001 G.M.T. Saturday, January 30, to 2359 G.M.T. Sunday, January 31, 1954.

3. The contests are open to all British subjects living within the British Empire and British Mandated Territories and to members of British Forces of Occupation 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 below. All entrants agree to be bound by the Rules of the contests.

4. An entrant who is not a member of the R.S.G.B. must certify in the declaration overleaf that he was a fully paid-up member of one of the listed British Empire Societies and that he was resident in that country at the time of the contest.

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

6. Only the entrant will be permitted to operate his station for the duration of the contest.

7. Entries must be legibly written or typed on quarto or foolscap paper (8 x 10 in. or 8 x 13 in.) as set out overleaf, using one side of the paper only. Sheet 1 will bear the name, address, etc., and declaration; Sheet 2 the analysis. Continuation sheets will continue the log in time order (G.M.T.).

8. All entries must be posted within 14 days of the close of the contest—postmarked not later than February 15, 1954—and must be addressed to the R.S.G.B. Contests Committee, New Ruskin House, Little Russell Street, London, W.C.1. The closing date for acceptance of entries is May 1, 1954.

9. The judging of entries will be carried out by the R.S.G.B. Contests Committee. The decision of the R.S.G.B. Council will be final in all cases of dispute. No correspondence will be entered into regarding any decision made by the Council or the Contests Committee.

10. Operation is restricted to the following bands: 3.5, 7, 14, 21 and 28 Mc/s. Transmissions must be of type A1 (pure c.w.) only and frequent tone reports of 18 or less may result in disqualification.

11. The conditions laid down in the entrant's licence must be observed. The input to the valve or valves delivering power to the aerial must not exceed 25 Watts in the Junior Section.

12. Contacts may be made with any station using a British Empire call sign in any of the Territories indicated in Rule 3, except that contacts with stations in the entrant's own zone, or with mobile or unlicensed stations in places where licences are obtainable, will not count for points. Only one contact per band with each station will count for points, but duplicate contacts should be logged. The decision as to whether or not a station is valid will rest with the R.S.G.B. Contests Committee.

13. For each zone (outside the entrant's own zone) the first contact on a specific band will count 15 points, the second contact 14 points, and so on till after the 14th contact they count 1 point each. This system will be repeated on each band. For entrants outside the British Isles, Zone 2 is subdivided into three zones under call sign figures: (a) Call signs with figures 2 and 4; (b) call signs with figure 3, and (c) call signs with figures 5, 6 and 8.

Thus, for example, stations signing G3, GC3, GD3, GI3, GM3 and GW3 are all in Zone 2b. British Isles stations cannot work each other for points.

14. Serial numbers must be exchanged and acknowledged before a contact can count for points. The serial number of 6 figures is made up of the RST report plus three figures which may start with any number between 001 and 100 for the first contact and will increase in value by one with each successive contact: e.g. 087 for the first and 088 for the second contact, etc.

### Receiving Contest

1. Rules 3 to 10 of the Transmitting Contest apply.

2. To count for points the log must show, in columns, (a) date; (b) time, G.M.T.; (c) band; (d) station heard; (e) serial number sent; (f) station worked; (g) when possible, serial number returned; (h) points claimed. CQ or Test calls will not count for points.

3. Each serial number entered in column (e) will count 3 points, and each serial number entered in column (g) will count 1 point. The total number of points thus claimed will be multiplied by the number of zones heard.

4. The same station may be logged only once in column (d).

### British Empire Societies

Amateur Radio Club of India.  
Canadian Amateur Radio Operators' Association.  
Canadian Section A.R.R.L.  
Ceylon Amateur Radio Society.  
Hong Kong Amateur Radio Transmitters' Society.  
Jamaica Amateur Radio Club.  
Malta Amateur Radio Society.  
Montreal Amateur Radio Club.

Newfoundland Amateur Radio Association.  
New Zealand Association of Radio Transmitters.  
Northern Rhodesia Amateur Radio Society.  
Pakistan Amateur Radio Society.  
Radio Society of East Africa.  
Radio Society of S. Rhodesia.  
South African Radio League.  
Wireless Institute of Australia.

**Call Sign** .....

**B.E.R.U. Contest, 1954.....Section**

Name (Block Letters).....

**Address** \_\_\_\_\_

**Input Power to Final Stage.....**

**Aerials Used**.....  
(Other station details may be included.)

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 Council of the 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 \_\_\_\_\_

Date	G.M.T. Contact Established	Band Used Mc/s	Call Sign of Station Worked	SERIAL NOS.		Points Claimed	(Leave Blank)
				Sent	Rev'd.		

TOTAL .. ..	100.00	100.00
-------------	--------	--------

## ENTRY FORM

**SHEET 2**

### Prefix Zone Analysis

Prefix Zone		Mc/s		Mc/s		Mc/s	
		Contacts	Points	Contacts	Points	Contacts	Points
1	AP, VU, 4S7						
2	(a) All G prefixes with Figures 2 and 4 ..						
	(b) All G prefixes with Figure 3 ..						
	(c) All G prefixes with Figures 5, 6 and 8 (see Rule 13)						
3	DL2, MB9						
4	MD, MF, ZB, ZC4, 5A2C						
5	VE1, VO ..						
6	VE2 ..						
7	VE3 ..						
8	VE4, 5, 6 ..						
9	VE7, 8 ..						
10	VK2, 4 ..						
11	VK3, 7 ..						
12	VK5, 6 ..						
13	VK9, VR4						
14	All VP except VP8 ..						
15	VP8, VK1						
16	VQ1-5, ZD6, ZE						
17	VQ6, 8, 9, VS9, MP4, ST, ZC2 (M13)						
18	VR1, 2, 3, 5, 6, ZK, ZM						
19	VS1-6						
20	All ZD except ZD6						
21	ZL ..						
22	ZS1, 2 ..						
23	ZS3, 6, 9 ..						
24	ZS4, 5, 7, 8 ..						
TOTALS .. ..							

## ENTRY FORM

**SHEET 1.**

### B.E.R.U. Receiving Contest, 1954

Name (Block Letters) .....

**Address** .....

**Details of station (optional)** .....

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 Council of the R.S.G.B. shall be final in all cases of dispute.

Date \_\_\_\_\_ Signed \_\_\_\_\_

*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 \_\_\_\_\_

Date	GMT	Band Mc/s	Station Heard	Serial Number sent	Station Worked	Serial Number Returned	Points Claimed
a	b	c	d	e	f	g	h
					Total Points .....		
					Multiply by.....No.of Zones		
					Grand Total .....		

**MAKE SURE YOU UNDERSTAND THE RULES AND DON'T FORGET TO SIGN THE DECLARATION.** In case of mistakes or uncertainties a note on the log will help. Suggestions for future contests are invited. **Note.**—In case of doubt see Rules 3, 5, 12.

### London Members' Luncheon Club

ONCE every month a number of London amateurs meet together informally for lunch. The London Members' Luncheon Club—founded nearly five years ago—is always happy to welcome amateurs from abroad. Commonwealth amateurs who contemplate visiting London are asked to enquire from R.S.G.B. Headquarters the dates when meetings of the Club are to be held. As a general rule the Club meets on the third or fourth Friday of the month at the Bedford Corner Hotel, Tottenham Court Road, W.C.1, at 12.30 p.m.

The Chairman of the Club is Stanley Vanstone, G2AYC, the Hon. Treasurer is Clem Jardine, G5DJ, and the Hon. Secretary, May Gadsden.

A CORDIAL INVITATION IS EXTENDED TO ALL OVERSEAS COMPETITORS IN THE B.E.R.U. CONTEST TO JOIN THE R.S.G.B. FULL DETAILS AND THE CURRENT ISSUE OF THE R.S.G.B. BULLETIN WILL BE SENT ON REQUEST.

# Council Proceedings

*Résumé of the Minutes of the Proceedings at 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 Tuesday, July 14, 1953, at 6 p.m.*

**Present.**—The President (Mr. Leslie Cooper, in the Chair), Messrs. I. D. Auchterlonie, H. A. Bartlett, F. Charman, C. H. L. Edwards, D. A. Findlay, R. H. Hammans, F. Hicks-Arnold, J. H. Hum, A. O. Milne, L. E. Newnham, R. Walker, and John Clarricoats (General Secretary).

## Apology for Absence.

An apology for absence was submitted on behalf of Mr. P. W. Winsford.

## Membership.

### Resolved:—

- to elect 45 Corporated Members and 15 Associates;
- to grant Corporate Membership to 4 Associates who had applied for transfer;
- to grant Life Membership to Mr. John Banner, GW3ZV.

## Applications for Affiliation.

Resolved to grant affiliation to H.M.S. Ariel Amateur Radio Society.

## Loyal Address and Coronation Relay.

An official acknowledgement of the Loyal Address, signed personally by the Secretary of State for Home Affairs (Sir David Maxwell Fyfe), was tabled. [A copy of the official acknowledgement was reproduced in the July issue of the BULLETIN.—Ed.]

It was reported that the Home Office had sent a similar form of acknowledgement to each of the Societies participating in the Coronation Relay.

A letter of criticism regarding the arrangements made for the Coronation Relay was submitted from the Hong Kong Amateur Radio Transmitting Society, together with a Report from the Coronation Relay organiser.

Resolved to reply to the Hong Kong Amateur Radio Transmitting Society along the lines of the Report prepared by the Relay organiser.

## V.H.F. and U.H.F. Band Planning.

A Report of a meeting, held on July 2, 1953, to discuss V.H.F. and U.H.F. Band Planning, was submitted.

The President, Honorary Editor and General Secretary reported briefly on the successful outcome of the meeting. (An account of the meeting appeared in the July issue of the BULLETIN.—Ed.)

## Meeting with London Representatives.

Consideration was given to a further letter from the Region 7 Representative (Mr. W. H. Matthews) regarding the recent meeting of London Representatives (see *Résumé of Minutes of Meetings*, held on April 27 and May 8, 1953).

Resolved to invite Mr. Matthews to suggest a date in the autumn when it would be convenient for representatives of the Council to meet him and his District Representatives.

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

Resolved to accept an estimate from South London Press, Ltd., for printing a third edition of the R.S.G.B. Amateur Radio Call Book and to fix the retail price at 2/6d. per copy.

It was agreed to make arrangements to publish the new edition on November 25—the opening day of the Seventh Annual R.S.G.B. Amateur Radio Exhibition.

## Call Sign Badges.

A letter was submitted from the manufacturers of Society call sign badges in which it was explained that the production of such badges is extremely unprofitable in small batches. In general the manufacturers wait until orders for 12 badges have been received.

The Secretary reported that under normal conditions a delay of three to four weeks occurs, but during recent months (probably as the result of a rush of Coronation orders) the manufacturers had been unable to supply badges in less time than eight to ten weeks.

## National Emergency Amateur Radio Communications Service.

It was reported that a considerable number of members had offered to act as "key" stations.

Mr. Milne (Chairman of the *ad hoc* Committee set up in March, 1953) agreed to convene a meeting of that Committee in order that recommendations can be made to the Council to invite selected members to serve on a new National Emergency Committee.

## Broadcast Stations in the 7 Mc/s Band.

A list of broadcast stations which operate regularly in the exclusively amateur portion of the 7 Mc/s band was submitted.

The Secretary stated that a copy of the list would be sent to the G.P.O. with a request that a protest be lodged with the International Telecommunications Union.

## Special General Meetings.

The Secretary reported that he had, that day, received from the Society's legal advisers a copy of the draft Articles showing the various amendments proposed by the Board of Trade. He also submitted, for information at this stage, a memorandum he had prepared at short notice outlining the amendments.

After a lengthy discussion it was Resolved (by nine votes to one, with one abstainer):—

- to hold a Special General Meeting on October 23, 1953, for the purpose of dealing only with those Articles which relate to Subscription Rates;
- to hold a Special General Meeting on December 18, 1953, for the purpose of dealing with the remainder of the Articles.

The Hon. Treasurer intimated that he could not, at this stage, say whether it would be possible to operate the Society on a Corporate subscription rate lower than the proposed ceiling rate of 30/- per annum.

## Cash Account.

Resolved to accept and adopt the Cash Accounts for the month of June, 1953.

## Lausanne Conference.

Mr. Hammans submitted a Report dealing with the work of the Technical Committee at the recent I.A.R.U. Region I Conference held in Lausanne.

It was announced that the Report would be typeset and copies submitted to the Technical Committee at its meeting on August 6 and to the Council on August 11.

Resolved to place on record the appreciation of the Council to Mr. Hammans for preparing the Lausanne Conference Technical Committee Report.

## Television Sub-Committee.

The Secretary submitted the Minutes of a Meeting of the Television Sub-Committee held on June 29, 1953, together with the Report of a Meeting between members of that Committee and representatives of the G.P.O. held on the following day. Mr. Clarricoats stated that arising from the latter meeting a letter had now been sent to the G.P.O. asking that their policy in respect to certain aspects of the TVI problem be reviewed. [In particular the Society is asking the Post Office to relieve an amateur from responsibility when it is clearly established that interference to television reception is due to unsuitable receiver design.—Ed.] During the subsequent discussion, members of the Council indicated, from their personal experience, types of television receivers which are, from an Amateur Radio point of view, TVI proof.

The meeting terminated at 9.15 p.m.

## Representation

The following amendments should be made to the list of Town Representatives published in the February 1952 issue:

### Region 1—Cheshire

#### Stockport

D. J. Birch (G3A00), 106 Nasmyth Street, Denton, Manchester.

#### Lancashire East

#### Manchester North-West

L. G. Cratchley (G3IXC), 18 Duckworth Road, Prestwich.

### Region 3—Staffordshire

#### Wolverhampton

G. L. Blunn (G3CNY), 23 Lichwood Road, Wednesfield.

### Region 4—East Midlands

#### Retford

H. White (G3BTU), 39 Trent Street, Retford, Notts.

## Vacancies

Messrs. J. R. Borrill (G3FKK) and F. J. Rutter (G2FMF) have resigned as Representatives for the Towns of Hull and Uxbridge respectively. Nominations for their successors should be made in the prescribed form and sent to reach the General Secretary by not later than September 30, 1953.

NOTE.—All present Town Representatives will automatically go out of office on December 31, 1953.

## Side Slip

Mr. F. Hague's call sign is ZBIAH and not ZBIH as quoted in the August BULLETIN under "Council Proceedings" (page 87). Mr. Hague was recently elected to Life Membership.

## Can You Help?

■ L. M. Arrowsmith (B.R.S. 19480), 51 Alverstone Avenue, West Hartlepool, Co. Durham, who requires the circuit diagram and any information on the TV5 transmitter (believed to have been made by the Marconi Co. for the Royal Navy). The transmitter uses KT66 (oscillator), KT8 (p.a.) and two KT66s (modulators).

■ Lt-Col. A. J. A. Schofield, 80 Lower Park Road, Hastings, who would like to hear from any other owner of a U.S. Signal Corps bandswitched transmitter which covers 2-20 Mc/s and uses 3A4, IT4, 2E22 (p.a.), CV188-type voltage regulator, 3A4 and IT4 (modulator).

## Regional and Club News

**ABERDEEN AMATEUR RADIO SOCIETY.**—Lectures on "Crystal Grinding" and "Grid Dip Oscillators" were given at recent meetings. An informative news-letter is now published. More than 40 "Coronation Awards" have been issued by the Society. *Hon. Secretary:* A. G. Knight, 6 Blenheim Lane, Aberdeen.

**BRITISH TWO CALL CLUB.**—Although a number of new members have recently joined the Club, membership is still only about one-third of those who have held licences in two or more British Commonwealth countries. *Hon. Secretary:* G. V. Haylock (G2DHV), 63 Lewisham Hill, London, S.E.13.

**BRISTOL.**—At the August meeting T. W. Francis spoke on "The Evolution of Disc Recording." With the assistance of B.R.S. 19727, the lecturer traced the progress of disc recording from its infancy (around 1900). If sufficient support is forthcoming, classes of instruction for the Radio Amateurs' Examination will be held at the College of Technology, Unity Street, Bristol 1, during the winter. Members interested in this proposal are asked to communicate with R. E. Griffin, G5UH (Telephone Bristol 63723).



Another Radio Wedding

Miss M. W. Rhodes, GM3IMR, was married recently in Glasgow to Mr. F. D. Christie, GM3FAX. Mr. J. Davison B.R.S. 19963, acted as best man. As the newlyweds intend to maintain individual rigs there will be two shacks—but we hope no QRM—in their new home in Dennistoun!

**CAMBRIDGE UNIVERSITY WIRELESS SOCIETY.**—The workshop has been reorganised and the transmitter partly rebuilt. The first lecture of the new term—"Tape Recording," by J. M. Carter, of Wright and Weare Ltd.—is arranged for October 12. *Hon. Secretary:* R. C. Marshall, St. John's College, Cambridge.

**COVENTRY.**—The Group has purchased a 2.5 kW generator set for use during field day events. The A.G.M. will be held on October 23.



An amateur radio station was operated under the call G6HH/A at the recent Hastings and St. Leonards Hobbies Exhibition. In this picture the Sussex C.R. (John Heys, G3BDQ) is at the controls of a 2-metre receiver, Doug Raitt (G3IKE) is at the microphone and S. W. L. Page is ready to log incoming signals. The main transmitter was loaned by Jack Sargeant (G3CMN). A Pandapter can be seen just below the "on the air" notice.

[Photo courtesy "Hastings and St. Leonards Observer"]

## EAST OF SCOTLAND REGIONAL MEETING

**SUNDAY, SEPTEMBER 27, 1953.**  
**SCOTIA HOTEL, 11 GT. KING STREET,  
EDINBURGH 3.**

Assemble -	-	-	-	2.00 p.m.
Business Meeting -	-	-	-	2.30 p.m.
High Tea -	-	-	-	5.00 p.m.

Tickets (10s. each) from K. Senior (GM3AEI), 23 Marchmont Crescent, Edinburgh 9, or A. Dewar, 37 Calder Circle, Edinburgh 11.

**GRAFTON RADIO SOCIETY.**—The A.G.M. is to be held on September 18 and a Junk Sale on September 25. On October 9, John Clarricoats (G6CL) will lecture on "The History and Development of Amateur Radio" at 8 p.m. From September 28, meetings will be held at Grafton School, Eburne Road, N.7, at 7.30 p.m. on Mondays and Fridays. *Hon. Secretary:* A. W. H. Wennell (G2CJN), 145 Uxendon Hill, Wembley Park, Middlesex.

**MERSEYSIDE RADIO SOCIETY.**—Members of the Model Control Group are experimenting with a radio-controlled model crane. The Society publishes a 4-page news-letter "QRZ." *Hon. Secretary:* J. B. Trueman (G3GJG), 141 Ince Avenue, Liverpool 4.

**RAVENSBORNE AMATEUR RADIO CLUB.**—Commencing September 23, meetings will be held on Wednesdays at 8 p.m. at Downham Men's Evening Institute, Durham Hill School, Downham. *Hon. Secretary:* G. V. Haylock (G2DHV), 63 Lewisham Hill, London, S.E.13.

**READING RADIO SOCIETY.**—Meetings take place at the Abbey Gateway at 7 p.m. on the second and last Saturday each month. The Annual Hamfest will be held at the Galleon Cafe, London Street, on October 11. *Hon. Secretary:* L. A. Hensford, B.E.M. (G2BHS), 30 Boston Avenue, Reading.

**SLADE RADIO SOCIETY.**—The Society will run a stand at the local Model Engineering Exhibition at Church House, Erdington, from October 8 to 10. *Hon. Secretary:* C. N. Smart, 110 Woolmore Road, Erdington, Birmingham 23.

**STOCKPORT RADIO SOCIETY.**—Seven members passed the recent Radio Amateurs' Examination. Morse classes are held on Wednesdays at the A.T.C. Headquarters, St. Petersburg. *Hon. Secretary:* G. R. Phillips, 7 Germans Buildings, Buxton Road, Stockport, Cheshire.

**TORBAY AMATEUR RADIO SOCIETY.**—The Society will meet at the Y.M.C.A., Torquay, on September 19 at 7.30 p.m., when all amateurs visiting the town will be warmly welcomed. *Hon. Secretary:* L. H. Webber (G3GDW), 43 Lime Tree Walk, Newton Abbot.

**WARRINGTON & DISTRICT RADIO SOCIETY.**—Meetings are held at 7.30 p.m. on the first and third Tuesdays in each month at the King's Head Hotel, Winwick Street. A Top Band contest is arranged for September 26. *Hon. Secretary:* G. S. Leigh (G2FCV), 49 School Road, Orford, Warrington.

## NORTH OF SCOTLAND REGIONAL MEETING SUNDAY, OCTOBER 18, 1953. NORTHERN HOTEL, ABERDEEN.

Assemble -	-	-	-	2.00 p.m.
Business Meeting -	-	-	-	2.30 p.m.
Afternoon Tea -	-	-	-	5.00 p.m.
Photographs -	-	-	-	5.30 p.m.
Dinner -	-	-	-	6.30 p.m.

Tickets (15s. each; double, lady and gentleman, 25s.; tea only, 3/6) from the Regional Representative (John Douglas, GM2CAS), 43 Abbotswell Drive, Aberdeen, or from Town and County Representatives.



# Forthcoming Events

## REGION 1

- Region 1 Hamfest**, October 10, Belle Vue, Manchester. See page 118 for details.
- Bury**.—October 8, 7.30 p.m., Y.M.C.A., The Rock, Bury.
- Chester (C. & D.A.R.S.)**.—Tuesdays, 7.30 p.m., Tarran Hut, Y.M.C.A., Chester.
- Crosby**.—Thursdays, 8 p.m., over Gordon's Sweet Shop, St. John's Road, Waterloo.
- Darwen & Blackburn**.—September 25, 7.30 p.m., Y.M.C.A., Limbrick, Blackburn.
- Isle of Man (I.O.M.A.R.S.)**.—October 7, Broadway House, Douglas.
- Manchester (M. & D.R.S.)**.—October 5, Brunswick Hotel, Piccadilly, Manchester.
- Rochdale**.—Fridays, 7.45 p.m., 1 Law Street, Sudden.
- South Manchester**.—Alternate Fridays, 7.30 p.m., Ladybarn House, Mauldeth Road, Manchester 14.
- Southport**.—September 17, 8 p.m., Y.M.C.A., off Eastbank Street, Southport.
- Stockport (S.R.S.)**.—Alternate Tuesdays, 8 p.m., Blossoms Hotel, 2 Buxton Road, Stockport.
- Warrington (W. & D.R.S.)**.—September 15, October 6, 7.30 p.m., King's Head Hotel, Warrington.
- Wirral (W.A.R.S.)**.—September 23, October 7, 21, 7.45 p.m., Y.M.C.A., Whetstone Lane, Birkenhead.

## REGION 2

- Barnsley**.—September 25, October 9, 7.30 p.m., King George Hotel, Peel Street.
- Bradford**.—September 29, 7.30 p.m., Cambridge House, 66 Little Horton Lane.
- Catterick**.—Wednesdays, 7 p.m., Loos Lines, Catterick Camp.
- Darlington**.—Thursdays, 7.30 p.m., 129 Woodlands Road.
- Doncaster**.—October 14, 7.30 p.m., "Black Bull," Market Place.
- Gateshead**.—Mondays, 7.30 p.m., Mechanics Institute, 7 Whitehall Road.
- Hull**.—September 29, October 13, 7.30 p.m., "Rampant Horse," Paisley Street.
- Middlesbrough**.—Thursdays, 7.30 p.m., Joe Walton's Boys' Club, Feversham Street.
- Newcastle**.—September 21 (A.G.M.), 7.30 p.m., 1 Jesmond Road. (N.E.A.T.S.) October 6, 7.30 p.m., Barras Bridge Hotel, Sandford Road.
- Pontefract**.—September 17, October 1, 8 p.m., Fox Inn, Knottingley Road.
- Rotherham**.—Wednesdays, 7 p.m., "Cutlers Arms," Westgate.
- Scarborough**.—Thursdays, 7.30 p.m., B.R. Rifle Club, West Parade Road.
- Sheffield**.—September 23, 8 p.m., "Dog and Partridge," Trippet Lane. October 14, 8 p.m., Albreda Works, Lydgate Lane.
- Slithwaite**.—Fridays, 7.30 p.m., 3 Dartmouth Street.
- York**.—Thursdays, 7.30 p.m., Club Rooms, Y.A.R.S., Fetter Lane.

## REGION 3

- Birmingham (South)**.—October 2, 7.15 p.m., Stirchley Institute (Room 7).
- Coventry**.—September 25, 7.30 p.m., Priory High School, Wheatley Street.
- Kenilworth, Warwick & Leamington**.—September 17, October 15, 7.30 p.m., Dalehouse Lane.
- Malvern**.—October 5, 8 p.m., "Foley Arms."
- Stourbridge (S. & D.R.S.)**.—October 6, 8 p.m., King Edward's School.
- Wrekin (W.A.R.S.)**.—Mondays, 8 p.m., Wrekin Service Club, Roseway, Wellington.

## REGION 4

- Alvaston**.—Tuesdays, Thursdays, 7.30 p.m., Sundays, 10.30 a.m., Nunsfield House, Boulton Lane, Alvaston, Derby.
- Chesterfield**.—Tuesdays, 7.30 p.m., Bradbury Hall, Chatsworth Road.
- Derby (D. & D.A.R.S.)**.—Wednesdays, 7.30 p.m., Derby College of Arts and Crafts, Sub-basement, Green Lane.
- Leicester (L.R.S.)**.—September 21, October 5, 7.30 p.m., Holly Bush Hotel, Belgrave Gate.
- Lincoln (L.S.W.C.)**.—September 16, 30, October 14, 7.30 p.m., Technical College, Cathedral Street.
- Loughborough**.—September 16, 7.30 p.m., Gt. Central Hotel.
- Mansfield (M. & D.A.R.S.)**.—October 4, 3 p.m., Denman's Head Hotel, Market Place, Sutton-in-Ashfield.
- Newark**.—September 27, October 11, 7 p.m., Northgate House, Northgate.
- Northampton (N.S.W.C.)**.—Fridays, 7 p.m., October 2, 6 p.m., Clubroom, 8 Duke Street.
- Nottingham**.—September 18, October 16, 7.30 p.m., Sherwood Community Centre, opposite Woodthorpe Drive, Sherwood.
- Peterborough**.—September 7, 7.30 p.m., New Inn, New England, Peterborough.
- Retford**.—October 5, 7 p.m., Community Centre, Chapel Gate.

## REGION 5

- Chelmsford**, October 6, 7.30 p.m., Marconi College, Arbour Lane, Chelmsford.
- Ipswich**.—September 23, October 14, 7.30 p.m., T.A. Drill Hall, Woodbridge Road, Ipswich.
- Lowestoft & Beccles (L. & B.A.R.C.)**.—September 23, October 14, 7.30 p.m., Y.M.C.A., Lowestoft.

## REGION 6

- Cheltenham**.—October 1, 8 p.m., 128 Prestbury Road.
- Gloucester (G.R.C.)**.—Thursdays, 7.30 p.m., The Cedars, 83 Hucclecote Road.
- High Wycombe**.—September 22, 7.30 p.m., G3DQC, 6 Peterborough Avenue.
- Oxford (O. & D.A.R.S.)**.—Alternate Wednesdays, 7.30 p.m., The Club Room, "Magdalen Arms," Ilfley Road.
- Portsmouth**.—Tuesdays, 7.30 p.m., Signals Club Room, Royal Marine Barracks, Eastney.
- Reading (R.R.S.)**.—October 11, 2 p.m., Galleon Cafe, London Street. Annual Hamfest. "U.H.F. Lecture," D. N. Corfield (G5CD).
- Southampton**.—October 3, 7.30 p.m., 1 Prospect Place.
- Stroud**.—Wednesdays, 7.30 p.m., Subscription Rooms.

## REGION 7

- Acton, Brentford, Chiswick**.—Tuesdays, 7.30 p.m., A.E.U. Rooms, High Street, Chiswick.
- Barnes, Putney, Richmond**.—October 13, 7.30 p.m., 337 Upper Richmond Road, East Sheen.
- Barnet**.—October 9, 7.15 p.m., Elizabeth Allan School, Wood Street, Barnet. "Junk Sale."
- Bexleyheath (N.K.R.S.)**.—September 24, October 8, 7.30 p.m., Congregational Hall, Chapel Road, Bexleyheath.
- Bromley (N.W.K.A.R.S.)**.—October 2, Shortlands Tavern, Station Road, Shortlands.
- Croydon (S.R.C.C.)**.—October 13, 7.30 p.m., "The Blacksmiths Arms," South End.
- Dorking**.—Tuesdays, 7.30 p.m., 5 London Road.
- Dulwich & New Cross**.—October 6, 7.45 p.m., "The Walmer Castle," Peckham Road, S.E.5. G2FKZ "Amateur Television Transmitter Design."
- Ealing**.—Sundays, 11 a.m., A.B.C. Restaurant, Ealing Broadway.
- East Ham**.—September 22, October 6, 8 p.m., 57 Leigh Road.
- East Molesey**.—October 7, 8 p.m., U.H.F. Gear, G2FKZ. "Camaron Castle Hotel," Hampton Court.
- Enfield**.—September 20, October 18, 3 p.m., George Spicer School, Southbury Road.
- Finsbury Park**.—September 22, 7.30 p.m., 164 Albion Road, N.16.
- Guildford & Woking**.—September 20, October 25, Royal Arms Hotel, North Street.
- Hendon & Edgware (E.D.R.S.)**.—Wednesdays, 8 p.m., 22 Goodwins Avenue, Mill Hill.
- Hoddesdon**.—October 1, 8 p.m., "Salisbury Arms."
- Holloway (G.R.S.)**.—September 18 (A.G.M.), 25 (Junk Sale). October 9 (History of Amateur Radio, John Clarricoats, G6CL). 7.30 p.m., Grafton School, Eburne Road.
- Ilford**.—Thursdays, 8 p.m., G2BRH, 579 High Road, Ilford.
- Kingston (K. & D.A.R.S.)**.—September 23, October 7, 7.45 p.m., Pynrhyn House, Pynrhyn Road.
- Kensington & Shepherd's Bush**.—October 9, 8 p.m., 38 Royal Crescent, W.11.
- Lewisham (R.A.R.C.)**.—September 30, and every Wednesday, 8 p.m., Durham Hill School, Downham.
- Norwood**.—September 19, October 17, 7.30 p.m., Windermere House, Westow Road, Crystal Palace.
- Slough**.—September 17, October 18, 7.45 p.m., Labour Hall, Chandos Street.
- Southgate & Finchley**.—October 8, 7.30 p.m., Arnos School, Wilmer Way, N.14.
- Sutton & Cheam (S. & C.R.S.)**.—October 20, "The Harrow," Cheam Village.
- Uxbridge**.—October 2, 7.30 p.m., "The Vine," Hillingdon.
- Watford (W.A.R.S.)**.—September 15, October 6, 7.30 p.m., "Cookery Nook," The Parade.

## REGION 8

- Brighton**.—T.R. at home. Wednesdays, 7.30 p.m., 27 Warren Way, Woodingdean.
- Chatham (M.A.R.T.S.)**.—Details from the Hon. Secretary, 14 Connaught Road, Chatham.
- Isle of Thanet (I.O.T.R.S.)**.—Fridays, 7.30 p.m., George Hotel, Hawley Street, Margate.
- Maidstone (M.K.A.R.S.)**.—Fridays, 7.30 p.m., Elms School, London Road.

## REGION 9

- Bristol**.—September 18, October 16, 7.15 p.m., Carwardine's Restaurant, Baldwin Street, Bristol 1.
- Exeter**.—October 2, 7 p.m., Y.M.C.A., St. David's Hill.
- North Devon**.—October 1, 7.30 p.m., Rose of Torridge Cafe, The Quay, Bideford.
- Penzance**.—October 1, Railway Hotel.
- Plymouth**.—September 19, October 17, 7 p.m., Tothill Community Centre, Tothill Park, Knighton Road, St. Jude's.

(Continued on page 137.)



## The State of Amateur Radio

Dear Sir.—I have read with interest your editorial "Facts About Frequencies" on page 7 of the BULLETIN for July, 1953.

The loss of amateur allocations on "Top Band," 7 Mc/s and 14 Mc/s, is not by any means allayed by the granting of 21 Mc/s and 420 Mc/s. While 21 Mc/s is undoubtedly a gain, unfortunately it is of little use as a substitute for 14 Mc/s, while 420 Mc/s is a band that very few of us have any interest in and certainly has no value to the vast majority.

The main point at issue, I submit, is the continual loading of amateur stations on to the existing bands without any increase in frequency allocations to accommodate them. This practice has produced such a state of chaos that it is practically impossible to effect a successful QSO on any other band, except 1.8 to 2 Mc/s. The hundreds of stations trying to work 3.5 Mc/s during recreational hours, i.e., evenings or weekends, demonstrates the crowded state of this amateur allocation. The 14 Mc/s band when open is no better and is a continual heterodyne from one end to the other, while 7 Mc/s is a thing of the past except for those who do not earn their daily bread at the usual time.

Probably 95 per cent. of us want to operate our stations evenings or weekends (during off-duty periods). Even this is impossible during television broadcasting on account of TVI. Boiled down, the amateur is faced with (a) closing down, or (b) subjecting himself and his family to the criticising hatred of the viewers of the locality. He usually chooses (a). Is it any wonder, then, that the large majority of "hams" are utterly tired of being kicked around? The obvious question they ask is, What is the Society doing about it? [NOTE.—The answer is that the Society has done, and is doing, a great deal. Apart from publishing two booklets on television interference problems, it has printed in the BULLETIN probably more practical advice on TVI precautions than has any other radio magazine in the world. The subject, too, is under constant active discussion with the G.P.O.—who, incidentally, have the luckless task of pacifying and pleasing viewer and transmitting amateur alike.—J.H.]

The fact remains, whether it is distasteful or not, that after nearly seven years, and in spite of the well-intentioned efforts of the Society, we are being kicked around more than ever. It is obvious that the Society cannot or will not act. [NOTE.—This is a mis-statement of fact.—J.H.]

I want to see a Society that is strong. It should remember that it represents 12,000 or more amateurs, including some of the best brains in the country. I want a Society that will continually press their case and not be put off with talk or excuses. [NOTE.—The Society is not aware of being "put off," but would welcome any evidence.—J.H.] I want a Society that will give a lead in organization and, if necessary, action. After all, there is nothing to stop every amateur, at a given signal, transmitting at maximum power on 14 Mc/s at the same time. We are only operating within the terms of our licence. What a groan could be expected! It undoubtedly would provoke an enquiry and bring to light our plight. [NOTE.—It might also be interpreted by the Government as an irresponsible act, and rebound very speedily to our disadvantage.—J.H.]

Mr. Eden has said that this nation will have to argue strongly, otherwise the U.S.A. will not respect us. That is absolutely what the Society has got to do, or the Radio Manufacturers' Association, the Post Office, and the Services, will not respect us.

It might be asked: What can the Society do about it? One thing is certain, that if it does not do something quickly it will lose the confidence of its membership and any prestige it has left.

It could approach the Manufacturers' Association and ask that any new model of television receiver should be submitted to the R.S.G.B. Technical Committee, who would examine its design as to rejection of amateur signals and, if satisfactory, issue a certificate to the manufacturer stating that this receiver has been examined by the R.S.G.B. and is guaranteed free from interference from amateur radio transmissions. It is probable the manufacturers would welcome such a guarantee to boost their sales. [NOTE.—On the other hand it might draw unwelcome attention to the possibility of TVI, which, in the first place, it is the individual amateur's job to prevent. Secondly, of all the possible forms of interference to television, that caused by "radio transmissions—all types" is a very small part, being no more than 1.3 per cent.—J.H.]

As regards existing frequencies there is, undoubtedly, little hope of relief. The die is cast. It seems the only way out for the amateur is that an entirely new allocation of frequencies should be forthcoming, the fundamental and harmonics of which are widely separated from the trend of present TV design and TV transmission frequencies.

This, in view of allocations made by the Post Office and International Conference agreements, might seem impossible. The fact unfortunately remains with us that unless something is done the chaos and confusion will remain. [NOTE.—Frequency allocations on an arbitrary basis are not possible, being agreed internationally, as was pointed out in the July editorial. British amateurs, in fact, have more than the Atlantic City allocations. The answer is not to attempt to dodge TVI by using new hypothetical frequencies, but to ensure that existing equipment is so constructed that it can be given a "clean bill of health" from the TVI point of view.—J.H.]

Judging from your remarks in "Current Comment" you are aware of the rumblings of discontent.

May I ask that you give the membership full scope to discuss their views in the BULLETIN without censorship? Some way out of the mess we are in may come to light.

Yours faithfully,  
Ilford.

Yours faithfully,  
R. T. Jago (G2IG).

## Operating Standards

Dear Sir.—It is my belief that the standard of telegraphy operating on the amateur bands is much higher than 15 years ago. Of necessity the introduction of the v.f.o. has changed the technique required to a higher level than was necessary under pre-war conditions. It is acknowledged that competition is much fiercer and interference stronger—these two factors alone make the average c.w. operator a slicker "key-basher" than those of a decade and a half ago.

With ten years of active Amateur Radio and seven years marine operating sandwiched between the pre- and post-war years, I have formed the opinion that the good operator is not born but is made by the conditions in which he has to work. High speed of working is not the criterion over radio circuits—to my mind the man who comes back at a perfect 25 w.p.m., having been informed of heavy interference, is quite definitely a "lid."

My observations on the Spirit of Amateur Radio do not favour the present day. The helping hand is still there, but I think that higher power, ease of working DX, and the increasing complexities of technique, have modified the camaraderie of pre-war Amateur Radio.

On telephony I have little comment—hangs yet the Wouff Hong\* on its rusty nail?

Yours faithfully,  
F. L. FIRTH, B.Sc., 1st Class P.M.G. (G8JD).

\* Wouff Hong—a mythical instrument of torture to be used in enforcing good operating practices. First mentioned in QST in 1917; the Editor (the late Ken Warner) took the weird object to an A.R.R.L. Board Meeting in New York on May 3, 1919. QST later reported that "each face noticeably blanched when the Wouff Hong . . . was laid on the table." By order of the Board the Wouff Hong now hangs in the office of the League's Secretary.—Ed.

## TVI And All That

Dear Sir.—Lieutenant Deacon's letter (August issue) pinpoints in timely fashion that burning question of the amateur hour, TVI And All That, and while there is evidence that the Post Office Engineering Department have more than a grain of sympathy for us in cases where the interference is due to bad receiver design, or inadequate signal input, it is very doubtful whether the amateur will ever receive that justice which is his due in these instances, since those responsible for high level policy appear not to have the slightest idea as to what their policy should be. It is, Sir, a sobering thought to realise that the Government, like millions of otherwise normal citizens, is so dominated by the spell of this modern Cyclops that on the one hand they decree that the screen is sacred to such an extent that in some areas even work of national importance is stopped during the afternoon TV so that local viewers may "Watch with Mother," and yet on the other hand they lack the courage necessary to implement "their own logic by compelling the suppression of electrical interference by force of law—a measure at least six years overdue—preferring instead the policy of "dilly-dally" and fruitless appeal, the good old British policy of "too little and too late." In the face of this Jekyll and Hyde outlook, we shall be very foolish to expect any consideration.

As for the curing of this menacing problem, it is one of such complexity and hidden snags that despite the magnificent work of Louis Varney (G5RV)—the full extent and vicissitudes of which probably only we who live in Chelmsford will ever realise—I am afraid its solution may well be beyond many of us.

Personally, rather than spend the remainder of my life battling against this ever-growing headache, I have almost resigned myself to operation outside TV hours, however much they may spread—as they no doubt will—fortified by the knowledge that I am 10 per cent. operator and 90 per cent. "plumber," plus the reflection that if the lead container in which I shall one day quit this mortal earth is properly sealed, I shall at last be adequately screened!!!

Yours faithfully,  
Chelmsford, Essex.

Yours faithfully,  
L. J. FULLER (G6LB).

## More Food for Thought

DEAR SIR.—With reference to the letter in the August BULLETIN under the heading "Food for Thought," I really feel that I must join issue with my good friend G3BCM and suggest that he does a little less *thinking*, which is tending to cause him to become somewhat of a "ward-room lawyer," and get down to *doing* something.

I agree with him re a certain amount of lack of knowledge concerning affairs relating to Amateur Radio and particularly the R.S.G.B. and its activities, but whose fault is that? Presumably from his letter it is due to lack of meetings in his area, anyway. But who is to blame for that? Headquarters or the Town Representative? The latter obviously, but who voted the T.R. into office or let him retain office by doing nothing about it? Why G3BCM of course, and the others in his area.

The T.R.s come up for appointment every two years and this December ends their present term of office. Let G3BCM if dissatisfied, get moving and have appointed as T.R. someone who will do what he wants or get the membership to elect him as T.R.

He complains of the liaison arrangements with the G.P.O. re frequencies, etc., and suggests that we should throw overboard the very excellent liaison arrangements built up over years for a seat on the B.J.C.B. Does he really think that we should benefit in any way? As he himself says "after all, the G.P.O. must put first things first" i.e. the national interest. With a seat on the B.J.C.B. we'd have to fight our own battles without the support of the G.P.O. and our vote would be one against many. Undoubtedly we should come off much worse than we have done so far.

His comments re the proposed National Emergency Amateur Radio Communication Service show a complete lack of appreciation of the objects of such a service and what has been published in the BULLETIN regarding it. He has only to look back to the East Coast floods of last February and what was done by unorganised amateurs to realise the need for such a Service. This Emergency Service, as I see it, will cost the Society nothing except postage. The hard work and organising to which he refers will be done by the membership. As to putting the matter to the vote, as he suggests, I should have thought that the number of letters that Headquarters received on the subject would have been sufficient to convince him of the feelings of the membership in the matter. Anyway, does he want Council to take a vote on everything before they make a decision? If so, why go to the bother and expense of having a Council at all?

Regarding the amateur *vis-a-vis* authority and the amateur status, let G3BCM place himself in the place of the G.P.O. and try and balance our needs (i.e. some 10,000 amateurs) against how many MILLIONS of BC and TV set owners? As one amateur who has had complaints of BCI, I'm quite satisfied with my status and I can still be heard operating any night! Thanks to the Post Office!

Finally he goes on to talk of "the achievements of our fraternity in the field of radio science..." What achievements? If he likes to go back 25 or 30 years I'll quote him many but as he quite rightly says this is 1953 and not even 1939. What with commercially-built receivers, and even transmitters, one has only to listen on, say, 80 metres to realise that it's quite an achievement to have a 100 per cent. phone contact, and to do that one has to use 100 to 150 watts! No, let's face it, our standing as Amateur Radio scientists went out in 1946 with the introduction of the Amateur licence in place of the pre-war Experimental licence. The holders of present-day licences are Amateur Radio operators and amateur constructors, from someone else's design, but very little else.

In conclusion may I make the following comment on G3BCM's five point programme:

(1) Representation on B.J.C.B. would be no advantage for the reasons I've already given.

(2) G3BCM appears to be unaware that the Society's Technical Committee does discuss TVI-BCI problems with the G.P.O. and B.R.E.M.A.

(3) The present system of leaving adjustment of BCI-TVI problems (assuming the amateur not at fault) in the diplomatic hands of G.P.O. officials works admirably, as I know from personal experience.

(4) Let G3BCM get busy as others have had to do and see that his T.R. does organise meetings or have appointed someone as T.R. who will do so.

(5) Re more space for Letters to the Editor? Well, if you can find room for this lengthy screed you will have at least satisfied him on one of his five points!

Yours sincerely,

E. RAYNER (G6IO)

Member, British Old Timer's Club

Sydenham, London, S.E.26.

Dear Sir.—I have read Mr. Deacon's letter in the August issue of the BULLETIN and wish to express my agreement with his proposals, especially the first three. If carried out they would greatly strengthen the R.S.G.B. and provide a convincing answer to the people who try to oppose it by saying that the R.S.G.B. is weak-willed. I hope that action will be taken. Yours faithfully,  
O. L. WELLS (G3FXE).  
London, N.W.3.

## Editorial Note

In the last paragraph, line 4, of Lt. Deacon's letter, the full stop after "members" should be deleted and a comma

inserted after "presume." The letter (L), not (W), should appear after Lieutenant, to indicate that Lt. Deacon is an Electrical Officer.

## V.H.F. Band Planning

Dear Sir.—I write to ask you to pass on to the Council at some convenient time the fact that members in this Region have expressed their satisfaction at the result of the recent V.H.F. band-planning meeting called by the Society.

Members active on these bands in this Region will certainly co-operate.

Yours faithfully,

Brighton, Sussex.

R. J. DONALD (G3DJD).  
Region 8 Representative.

## G2HA—Still Going Strong

Dear Sir.—With reference to the copy of a transmitting licence granted to me in 1913 (reproduced on page 9 of the July BULLETIN), I would like to tell you that although I am now nearly 80 I am still transmitting under the call sign G2HA. I had a transmitting licence many years before 1913 and made my first coherer and spark sets in 1899.

I still have the crystal set which I used with the transmitter in 1913.

Yours faithfully,

Buxton, Derbyshire.

A. L. MEGSON (G2HA).

## Silent Keys

We record with much regret, the passing of old timer Geoffrey H. Ramsden, G6BR, of Ilkley, Yorkshire. Geoff. had been a member since 1925, and although not very active in recent years he maintained an interest in Amateur Radio.

He was a regular supporter of the Annual Meetings in Region 2, and will be sadly missed by a wide circle of Amateur Radio friends. On behalf of the Society we extend our sincere condolences to his family in their sad loss.  
C.A.S.

His very many friends in the Radio and Valve industries will be sorry to learn of the sudden death of Mr. Harry Diggle on Monday, August 17.

At the time of his death Mr. Diggle was Managing Director of Hivac, Ltd., a subsidiary of Automatic Telephone & Electric Co., Ltd. During 1932, in collaboration with Mr. Stephen de Laszlo, he founded the High Vacuum Valve Co., which was responsible for much original work, particularly in the field of subminiaturisation. This Company was succeeded in 1939 by Hivac, Ltd.

Mr. Diggle had been a member of the Society since 1944.

It is with sorrow that we record the death—after short illnesses—of two Northern Ireland amateurs—J. A. Foster (G1ZHLR), of Bangor, and E. C. McElvenny, of Belfast. Mr. Foster operated mostly on 14 Mc/s, although his chief interest was in constructional work. Mr. McElvenny, a popular member of the Belfast Y.M.C.A. Radio Club, had passed the Radio Amateurs' Examination and was due to sit for his Morse test.

Our sympathies are extended to their relatives.

S.H.F.

## FORTHCOMING EVENTS.—(Continued from page 135)

### Region 9 (continued)

Torquay.—September 19, October 17, 7.30 p.m., Y.M.C.A., Castle Road.

West Cornwall (W.C.R.C.).—September 17, October 1, 15, Fifteen Balls, Penryn, near Falmouth.

Weston-super-Mare.—October 6, 7.30 p.m., Y.M.C.A.

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

### REGION 10

Cardiff.—October 12, 7.30 p.m., "The British Volunteer," The Hayes, Cardiff.

### REGION 13

Dunfermline.—Mondays and Thursdays, 7.30 p.m., behind 34 Viewfield Terrace, Dunfermline.

Edinburgh (L.R.S.).—September 24, October 8, 7.30 p.m., 25 Charlotte Square, Edinburgh.

### REGION 14

Falkirk.—September 25, October 9, 7.30 p.m., The Temperance Cafe, High Street, Falkirk.

Prestwick.—September 20, 7 p.m., Royal Hotel, Prestwick.

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RCA AR88, AR77E; Hammarlund HQ 120, HQ 129X; G.E.C. BRT 400; Hallicrafters SX28, S27, S27C, S27CA, a c.d.c. S38, SX24, SX42, SX43; RME and other late types; USA BC342, 348, 312; Collins 75A.

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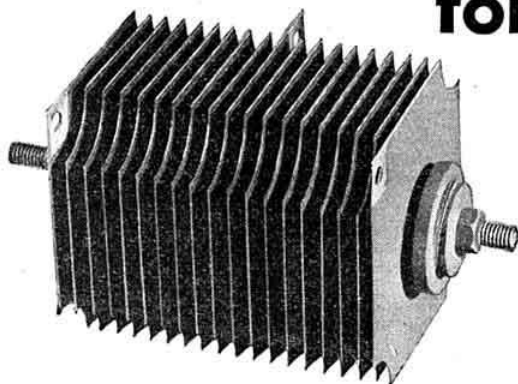
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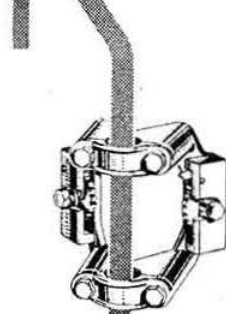
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6J6	12/6	CV85	7/6	L65	6/6
6J7G	9/6	CV174	25/-	ML4	7/6
6K7G	8/6	CV1001	7/-	MS/PEN	7/6
6K8G	12/6	CV1582	7/-	MS/PEN B	7/6
6L6G	11/6	D1	2/6	PEN46	10/6
6N7G	10/6	DA41	20/-	S130	7/-
6SL7GT	9/6	DH77	10/-	SP41	3/6
6SN7GT	11/6	E1148	5/-	SP61	5/-
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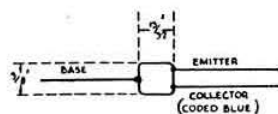
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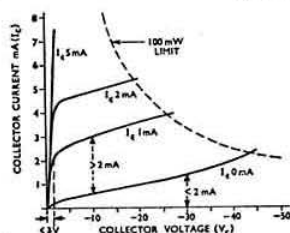
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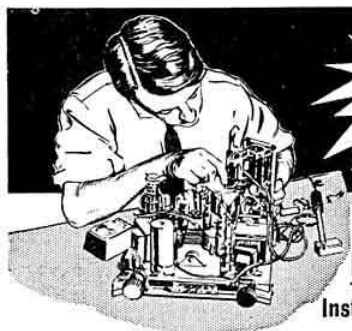
$V_c$ (collector voltage) for short-circuit stability at $V_e=0^*$	-30	max.	V
$V_c$ (DC)	-50	max.	V
$I_c$ (collector current) DC	15	max.	mA
$T_{op}$ (operating temperature)	35	max.	°C
$P_c$ (collector dissipation)	100	max.	mW

Subject to  $p_c$  max. not being exceeded.  
 $*V_e$ =emitter voltage.

$I_c$ { at $V_c = -30$	2	max.	mA
$I_e$ (emitter current) = 0	1	average	mA
$V$ (at $I_c = 2$ mA)	3	max.	V
	1.5	average	V
$I$ gain { at $V_c = -10$	2	min.	
$I_c$ range 0–1 mA	2.5	average	

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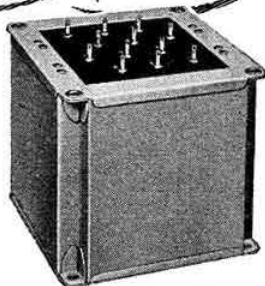
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(Continued on page 144)

## EXCHANGE & MART SECTION

(Continued from page 143)

**SALE.**—Radiovision Preselector, as new; band switched 3.3 to 32 Mc/s; own power supply.—Offers, CLACKSON, 7 John Street, Dunfermline. (628)

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**TCS** receiver required in first class condition, preferably unmodified; also a 130-A VHF signal generator, and S27 receiver. Good price paid.—Box 625, THE NATIONAL PUBLICITY Co., Ltd., 36-37 Upper Thames Street, London, E.C.4. (625)

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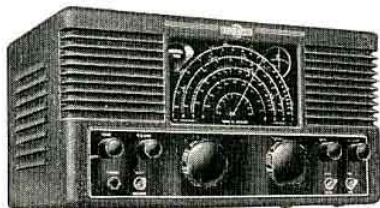
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