

**JOURNAL OF THE  
Q R P  
RESEARCH SOCIETY**

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“Q.R.P.”

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EDITORIAL.

This month has been an exceptionally pleasant one for me as it has brought in offers of cooperation and expressions of interest from such well known and long established organizations as F.O.C., TOPS CW Club, The Two Call Club, W.F.S.R.A. and Enfield Radio Society.

Until the beginning of this year the QRP Research Society has felt it's way, cautiously but with noteable success, through the pitfalls of early expansion, making no attempt to create meteoric (and often momentary) notoriety. Like a racing motorist we have run through our warming-up laps and, when the RSGB made public it's approval of our endeavours by granting us affiliation, it was in effect the starter's gun despatching us upon the road that leads to real opportunity. Those letters which have come to us this month are like the "thumbs-up" encouragement of our team mates on the track -- and what better simile could we chose for, surely, all organizations working for the betterment of amateur radio conditions and technique are members of one team.

With a warm sense of pride we record our appreciation of all those expressions of friendliness and encouragement which have come from our older "team mates".

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::::: THE TOP BAND "GANGSTER" :::::::::::::::::::::::::::::::  
A VERY SUCCESSFUL Tx BY G 3 E D W.

(The title of this rig was bestowed upon it, partly in reference to it's main feature of gang tuning, but it is also rather apt as the speed with which it is possible to QSY all over the band makes it very suitable for "smash & grab tactics" - Ed.)

This Tx was built to be a completely separate and self-contained rig for Top Band only and, with the RSGB Top Band Contests in mind, it was intended to run at the full 10 watts input and to be as simple in operation as possible. The result has been extremely satisfactory and is a joy to operate. All the tuning controls, VFO (C5), buffer (C18), PA (C24) and aerial (C29) are ganged to a single knob and all that is necessary when QSYing anywhere in the band is to switch to "NET", locate the VFO on the desired frequency, flick the switch to "TRANSMIT" and press the key.

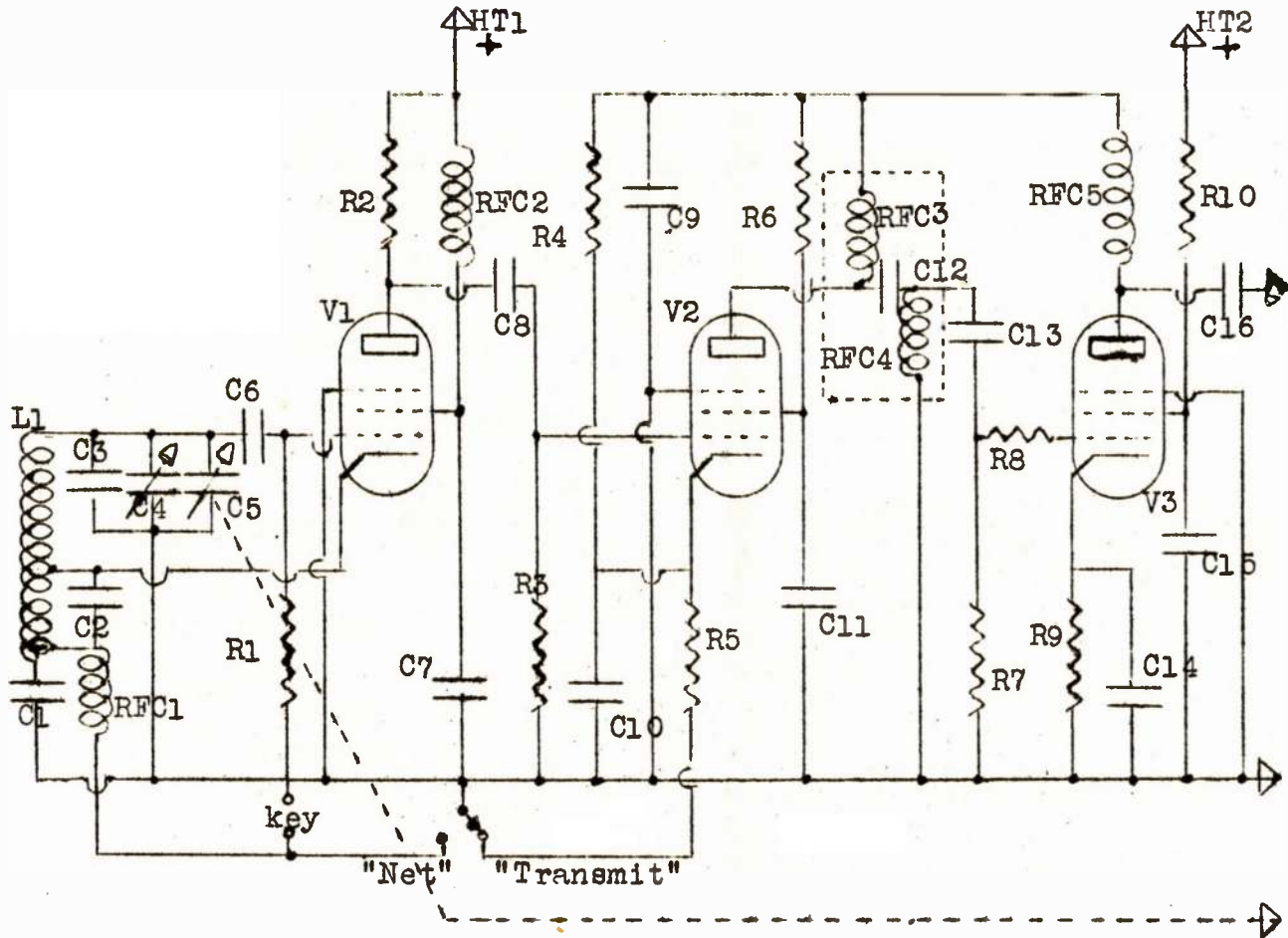
The HT voltages as shown are for 10 watt generation but the rig works well on QRP and it is recommended that HT1 and HT2 be taken via suitable resistors from the HT3 lead and this can then be taken to various tappings on the power pack depending on the input required. The use of a VR150 for the VFO HT is not at all essential and no ill effects will be caused by it's omission. For QRP work the rig has been used with 100 volts HT, giving an input of 1 watt, and many good reports have been received.

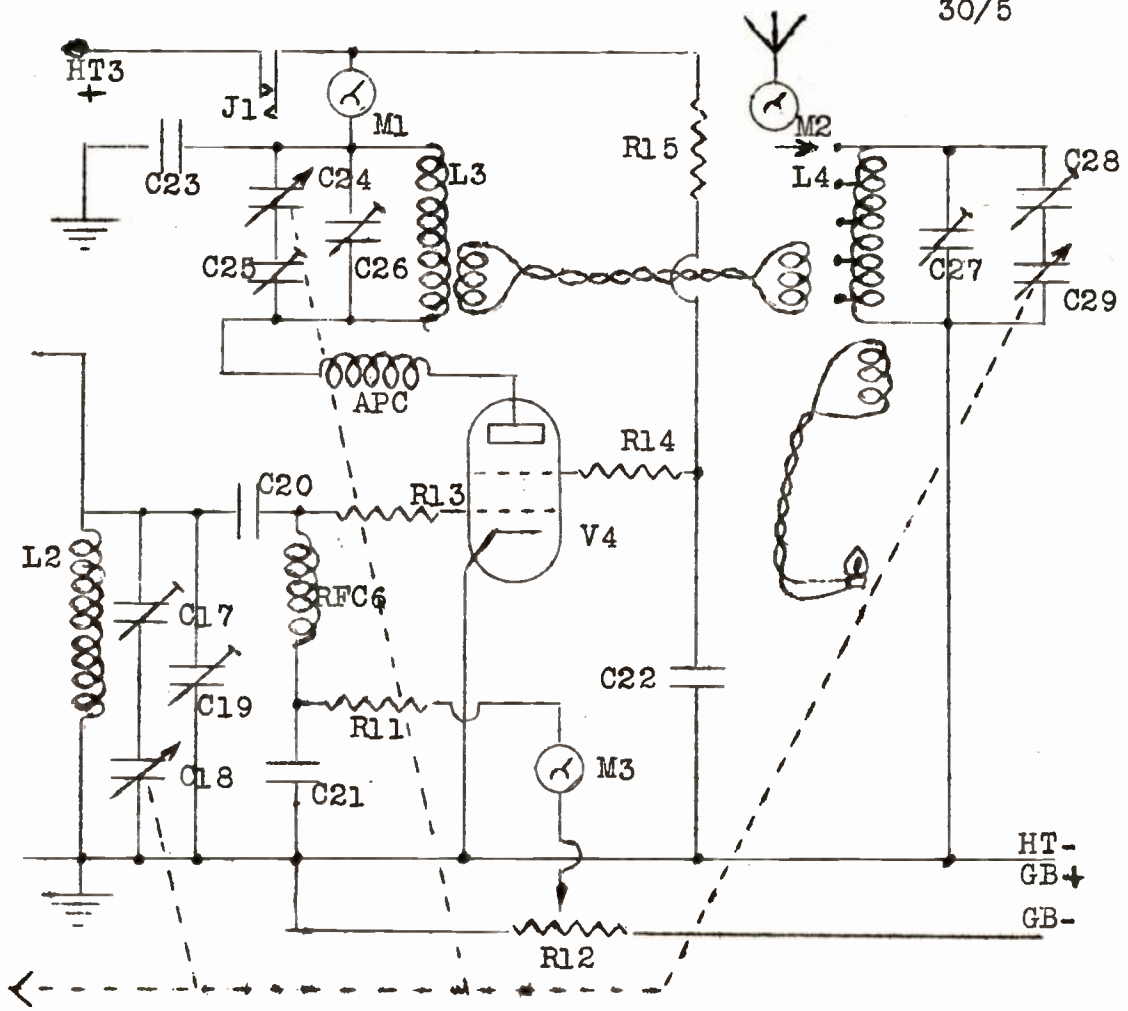
The types of valves used for V1, V2 and V3 are not critical and EF50s would serve admirably. Audio types such as 6V6, 6F6 and 6L6 should not be used as these valves are very prone to self oscillation because of the high anode to grid capacity.

The commercial WBC used is very expensive and one of several types of home-made WBC described recently in various magazines will do as well.

Condenser C2 may not look familiar. Theoretically the feedback in an ECO circuit should be satisfactorily adjusted by the position of the cathode tap, but I have yet to find an ECO which did not show a distinct improvement in keying when a small condenser was connected as shown. The actual size is a matter for individual experiment. R2 may seem rather small as an anode load for the ECO and infact larger output has been obtained from it by using an RF choke but as there are so many RF chokes in the circuit this caused a spurious oscillation. It is possible that calling CQ on two different frequencies simultaneously may result in more replies, but there is no doubt that the GPO would regard this advanced technique with disapproval, so the 5K resistor was used instead. Actually the two buffer stages provide ample drive and the VFO should be regarded as a source of stable frequency rather than of power. Resistor R4 was added to increase the bias on V2 because that valve was causing some "hash" in the Rx. The same thing could be done to V3 if it gives similar trouble. R8, R13 and R14 as well as APC are all anti-parasitic measures. No special precautions against TVI have been taken and the rig has not yet been enclosed in a cabinet, but it has been used with the full 10 watts input to a half wave aerial and caused no trace of interference to a TV Rx in the next room.

The by-pass condensers are shown as various values between .01 and .1. This is just because they happened to come to hand that way and they could probably all be anything between those limits. However, if phone is to be used, C22 and C23 should be no larger than shown or the higher anode frequencies will be by-passed and cause loss of crispness and modulation depth. The 5 mA grid meter need not be a permanent installation as it serves no useful purpose once the rig has been aligned and the station test meter can be used for that operation. The aerial current meter can







also be dispensed with once the correct tapping point has been found as the lamp will be sufficient indication of output. As a rough guide a half wave aerial should be connected to the "hot" end of the coil, a quarter wave approx half way down and anything shorter further down still.

The four ganged condensers should of course have vanes of similar shape, preferably semi-circular. No suitable condenser was found with large enough capacity for the aerial tuning so a BC two gang was used with the two sections strapped in parallel. The vanes were not quite semi-circular, but near enough to cause no difficulty in tracking. The padding and trimming capacities can be made up with combinations of fixed condensers and small preset variables or, better still, the compact mica dielectric variables, .0003 to .0005, once so popular in BC TRF receivers, can be used.

The ECO should first be adjusted. With the gang at minimum the parallel trimmer should be adjusted until the signal is heard at about 2030 Kc/s, then the gang should be set at maximum and, with the values as specified, the signal should be found below 1700 Kc/s. If the WBC is home made the 5mA meter should be temporarily inserted in series with R7 and the WBC adjusted for fairly even drive over the band. If the WBC in use is commercial it will need no adjustment. Now, with V4 in place and all voltages except HT3 applied, set the rig on approximately 1950 Kc/s and adjust C19 for maximum grid current, then shift to approx 1750 Kc/s and adjust the series padder C17. C19 may need a slight readjustment to even out the drive over the full band. HT3 should now be switched on and the tuning is now for dip in anode current, first C26 at 1960 Kc/s, then C25 at 1750. Now the aerial can be connected as suggested above and the same routine followed for aerial tuning.

C26 and C27 are brought out to controls on the front panel for convenience but they will not need any alteration during normal operation. The whole process is far quicker and easier to do

than to describe so don't let the slightly greater number of components deter you from the pleasure of operating a single control Tx. The right angled drive for tuning is a surplus component originally used in the army 21 set. Coil formers for L1, L2 and L3 are ex T1154 with the original windings removed and the grooves filed smooth. Coil data is as follows:-

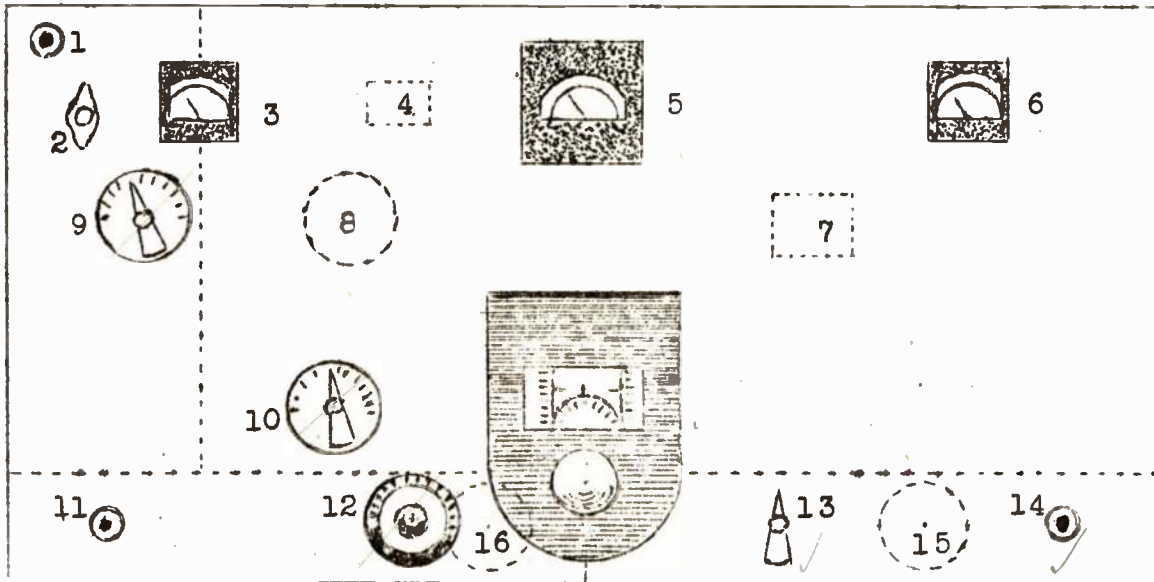
- L1: 28 turns, 26 swg closewound ( $1\frac{1}{2}$ " dia). Cathode tap 10 turns from earthy end.
- L2: 42 turns, 26 swg closewound ( $1\frac{1}{2}$ " dia).
- L3: 48 turns, 20 swg closewound ( $1\frac{1}{2}$ " dia). 5 turn link of PVC covered wire wound directly over anode end.
- L4: 50 turns, 20 swg closewound ( $1\frac{1}{2}$ " dia), tapped every 8 turns. Link as for L3.

The general components list is:-

C1,23,21: .005 mica...C2: 75pF...C3,13,16: 200pF...C4: 50pF trimmer (air spaced)...C5,18: 100pF variable...C6: 50pF mica...C7,14: 0.1...C8: 3/30pF trimmer...C9,15: 0.05...C10,11: 0.01...C12: 200pF (part of Labgear WBC)...C17,25,28: 200pF variable (see text)...C19: 300pF...C20: 100pF mica...C22: 0.002 mica...C24: 160 pF variable...C26: 100pF...C27: 250pF...C29: 500pF variable...R1,3,7: 100K,  $\frac{1}{2}$ W...R2: 5K, 1W...R4,11: 30K, 1W...R5,8,9: 1K...R6: 23K, 1W...R10: 10K, 2W...R12: 135K pot...R13,14: 68 ohm...R15: 16K, 5W...RFC1,2,5,6: 2.5uH...RFC3,4: part of Labgear WBC...APC: Anti-parasitic choke, 9 turns, 16 swg,  $\frac{1}{4}$ " dia,  $\frac{3}{4}$ " long...Labgear WBC: 1.7/2 Mc/s...J1: closed circuit jack for modulation...V1,2: 6SH7...V3: 6AG7...V4: 807  
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A special leaflet has been prepared in connection with the "200" contest setting out the 97 British Counties in order of County number. These are obtainable, price 2d plus return postage, from the Editor .

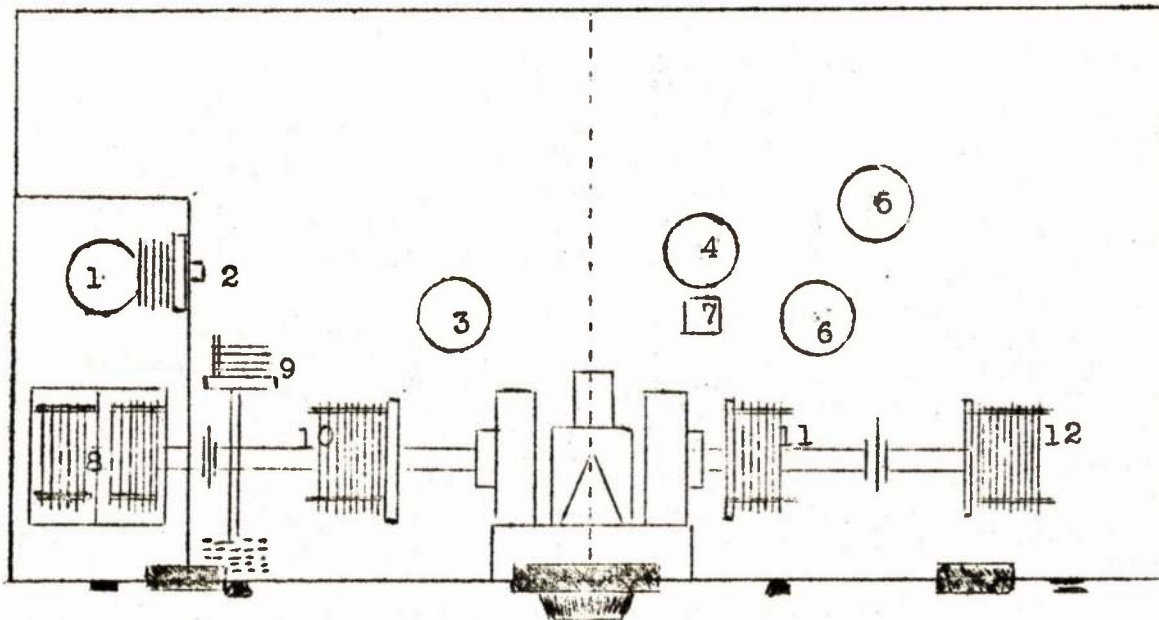




The panel of the "Gangster":-- 1: Aerial socket. 2: Indicator lamp. 3: M2, Antenna meter, .5A TC. 4: C25. 5: M1, Anode meter, 100 mA. 6: M3, Grid meter, 5 mA. 7: C19. 8: L3. 9: C27 10: C26. 11: Modulator socket. 12: R12. 13: "Non-swisher". 14: Key socket. 15: L1. 16: L2.

The panel dimensions are  $17\frac{1}{2}$ " wide x 11" high.

The general layout should be clearly understood from this panel sketch and the chassis plan opposite. The underside of the chassis is not shown as the main items are indicated here. It will be noticed that the rear half of the chassis is left free for the inclusion of a power pack later, and perhaps a modulator.



The "Gangster" chassis:-- 1: L4. 2: C28. 3: V4.  
 4: V3. 5: VR150. 6: V2. 7: WBC. 8: C29. 9: C28. 10: C24.  
 11: C18. 12: C5. Note the screen isolating details 1, 2 and  
 8; also the under chassis screen indicated by the dotted line.  
 The chassis dimensions are 16" x 10" x 2½" deep.

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S W L C O N T E S T S :-- With the exception of the C-Z  
 Panel SWL contests have received a disappointing lack of support.  
 We want to run one or more contests which will hold our listener  
 member's interest. Please let us have YOUR suggestions, OM.

30/10

..... THE "BEDFAST CLUB", by G3AAU .....

Your Editor, John, has very kindly given me a whole page in your "Q R P" in which to bring to your notice the existence of what he considers is a very worthwhile activity.-- the "Bedfast Club", organised and administered by the WFSRA (World Friendship Society of Radio Amateurs). In general terms the chief aim of this Club is (as John said in last month's "Q R P") 'to mitigate the tedium of any radio enthusiast who has the misfortune to be temporarily or permanently bedridden'.

That we are being successful in this aim can best be judged from the following extract of a letter that I recently received from one of our "Bedfast" members. He says: "Dear Bob, I have just received this month's "Skywire" (the WFSRA News Sheet) and it's arrival saved me from going crackers! It was one of those nights-- the ward was as quiet as a grave yard, everyone was either reading or writing--when in pops nurse with my copy of "Skywire". Suddenly the world came to life, and life was once again bright! You may think I'm kidding, Bob, but I can assure you it's fact. Hospital life is dreary at times, and one is apt to feel like going crackers!"

This is not meant to show that "Skywire" has any peculiar therapeutic value, but rather the importance of any single thing that can help to relieve the monotony of long hours in bed. Reading matter of all kinds is just such an aid. That is why "Bedfast Club" has set up a Book and Magazine Distribution Centre, ably looked after by a "bedfast" SWL - JOHN GILL, 30 SHOLEBROKE VIEW, LEEDS 7. He receives, sorts, and packs for re-distribution, reading matter of all kinds that is sent to him at the QRA given.

If any member of the QRP Research Society has any such reading matter which he could spare for this purpose it will be really very welcome indeed. Sincere thanks to you all for the response which I am sure will be forthcoming.

Bob Kenny, G3AAU.

30/11

Tx ACTIVITY and NEWS.

G3GEP (Enfield Radio Society's Station) is very much occupied at present with preparations for their DF Field Day on March 30. Transmission will be covered by a 2/3 watts battery operated Tx & there will be 4 Society receiving teams (dry battery) and they are expecting a further 3 receivers operated by other local clubs.

G3EDW (Peter Gollidge, Rayleigh, Essex) is busy once again on construction, the rig this time being a very compact xtal/VFO mixer with a couple of buffers and an 807 PA for 7, 14 and 28. He is also trying out a 134 ft Zepp with 68 ft of homemade 600 ohm feeder.

OZ5U (Peter Hansen, Nyborg, Denmark) is now running a new Tx (CO/ECO-PA) and is anxious for skeds with any QRP station on 40 & 80 -- frequencies 3520/7040 Kc/s, times 0545/0600 and 1630/1730 GMT nearly every day. Reports direct to Peter Hansen, OZ5U, Nymarksvej 34-1, Nyborg, Tyn, Denmark.

GC2CNC (Jersey, C.I) has a lot of interesting news this month. He will be in Sark on 14th/20th July and (subject to permission from the Dame of Sark) will be VFO on 5.5, calling GC2CNC/P. This will be quite an unique occasion and WHAT a chance for the "200" contest boys -- they will probably never get County No 79 if they miss this opportunity! Monty hopes to be active on 435 Mc/s with 5 watts shortly. The PA will be a tripler from the 145 Mc/s rig while the converter will be a copy of the circuit described by G2XC in the SWM, the antenna being a wide-spaced 6 element Yagi. Finally, he promises to QSL all reports providing a stamp is enclosed (envelope not needed) -- his present bands are: 1.8, 3.5 & 7.0 (all VFO) and 145.13 and 435.39 Mc/s, CW only.

The Q A U Club (Jersey) presents an open offer of hospitality to any member visiting the Island. Club night is every Wed, in the lounge of the "Wellington", St Saviours Rd, from 7.45 pm onwards.

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G3CED (George Partridge, Broadstairs) has nearly completed a new layout, the Tx being a Clapp VFO (EF50), BA/FD (EF50), PA (25 L6), and the Rx a O-V-1 (EF54-EF50), with a separate power pack. Last year George found holiday accommodation for a number of members, and several more wrote to him much too late. He is prepared to do the same again but stresses that ONLY VERY EARLY APPLICANTS ARE EVER LUCKY IN GETTING SUITABLE ACCOMODATION AT BROADSTAIRS.

Peter Amy (Jersey, C.I) has got his ticket and is now waiting allocation of a call, but as he is stationed in Wales (RAF) it seems he will, at least temporarily, become a GW. Peter is very anxious to get hold of a B2 rig -- can anyone help?

G2DHV (G.V.Haylock, London, SE13) who ran 1 watt phone on 59 Mc/s in 1948/49 is now running 2 watts RF with CW on 144.990 and 145.206 Mc/s. Contacts and reports will be welcomed.

G3HEV (o/o G2DHV) will be on the air on 1.8/3.5 bands up to 12 watts during March/May 1952. Contacts and reports will be welcomed.

G2AJU (Jack Cowles, Stutton, Ipswich) has been elected President of the ISWL. This, in addition to his duties as Suffolk rep for the RSGB, and the acquisition of a TVI proof QRO (75 watt) rig has kept him away from QRP work lately. (Shame on you, Jack--you could floodlight the whole shack with that lot!)

G3AGQ (Bob Eldridge, Salisbury) will be QRT for about a month as he will be on business in the Nottingham area.

G2ZC (Capt A.M.H.Fergus, Farnham) is convalescing after a bad spell of bronchial trouble. As 'Fergie' was until recently Hon Sec of FOC he has so many friends in the Society that I know I may say "we all wish you a speedy recovery, OM".

G5QI (W.S.Carter, Birmingham) is still tied up with sorting himself out after his recent move from Henley. His new QRA is: The Ards Lodge, Dorridge Road, Dorridge, Birmingham. As a number of his old friends have been enquiring I hope they will see this.

30/13

Rx ACTIVITY and NEWS.

Bob Kenyon (Liverpool) deserves our apologies as we did promise to feature his very fb O-V-1 this month and have again run out of space. Sorry, Bob-- we'll try still harder next month!

E.W.Gardiner (Diss, Norfolk) had quite an interesting month, hearing W4CG/P who is on Virgin Island at 2045 on 26th Feb on 14 Mc/s. He also collected YI3, VS7, ZD4, YV and CX. VP6SD came in on 14 and 3.5 on the same night (16/2/52).

W.Pothecary (Kettering, Northants) has finished his rebuilding at last, the O-V-1 line-up now being VP23-HL23 in place of 2x 1T4. Improvement is apparent on 80 and 160, but condx were not very good during test and VQ4EA and VE2JV were the best on 20.

Cliff Thorn (Guildford) is hard at work on a SH4, his aim being better selectivity than is possible with the average TRF rig.

G.H.Tillett (Rainham, Essex) is trying out a new O-V-1 (6J7-6C5) installed in an aluminium lined oak cabinet. A feature is very smooth reaction operated both by screen and choke control. He has also constructed a morse oscillator from the recent SWN CW number.

Peter Nuntsman (Hexham-on-Tyne) has found condx favourable to QRP, especially on 20. This may, in part, be due to his new dipole (45 ft legs, one N-S, one E-W). Comparing this with his previous 99 ft end-fed he found that sigs heard before only on phones now come in on the LS (LU, PV, W etc) via his O-V-2. On 25/2/52, from 1600 to 1700 he logged VS1, VS2, SU, ZD2, VI, KL7, KZ5, HC, MP4, and DU on 20 metres CW.

B.J.Read (Liverpool) sends the following, heard on his O-V-1: AR8BB, CR6AG, EA8BB, 9AS, 0AC, FF80A, HI6EC, HZ1AB, 1TA, KG6ABW, KL7ADR, 7AFR, 7AGR, KP4ES, 4FJ, MI3RR, 3US, OQ5AV, OX3BD, TA3AA, TF5SV, VP6FO, VQ2WS, 4ERR, 4RF, VS7GR, YI3BZL, ZD4BF, ZE3JO, ZL2BE, 2GX, 2JB, 2WS, ZP7AW and 18 ZS1, 2 and 6 -- all on 14 Mc/s phone.



30/14

Ian Glen (Coldingham, Berwickshire) has cleared his "square-bashing" at Padgate and has been posted to the Radio School at Locking, Weston-super-Mare for five months (radio-radar mechanic course).

Harry Wells (Waltham Cross) has completed his new rig and is pleased with results. He found the Top Band opened up during the month and gathered in one snip-- OK1ZW at S6 on 19th Feb at 2135. GW3EFZ was also heard on 160 working 3GWE with 3 watts.

Bill Harris (Gt Bealings, Suffolk) is spreading the QRP interest among the WFSRA boys and has a good looking O-V-2 coming out in their "Skywire".

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----- THE Q R P "200" CONTEST -----

Returns for FEB 1952	1.8		3.5		7		GRAND TOTAL
	FEB	TOT:	FEB	TOT:	FEB	TOT:	
GC2CNC	2	32	9	23	5	6	61
G3EDW	21	30	10	10	3	5	45
G3AGQ	3	36	6	6	-	-	42
G3HJL	-	-	16	16	-	-	16
G3FAU	4	12	-	-	-	-	12
G3HCW	12	12	-	-	-	-	12

30/15

We have two newcomers to welcome this month, 3HJL going into 4th place and 3HCW sharing with 3FAU a total of 12. Two points show up here -- our leaders are slowing down a shade and those at the bottom of the table haven't really got going yet. Obviously the scoring will slow down as each contestant works off the easier counties, so it is satisfying to see 'Monty', who has probably the difficult location of any, making a bold start. I am looking forward to a number of other new entrants next month as so much interest has been expressed in this contest. I am keeping a careful cross check on these returns as I anticipate that we may gain some useful information from them, but at present it is too early to pass any comment. One thing is noticeable - few entrants are using the permissible input. 3FAU is working between 0.9 and 1.1 watt, 3HJL runs between 0.5 and one, and 3EDW uses one to 1.5

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-----THE Q R P "100" CONTEST-----

We have had a number of promises of entries in this contest, but in each case the writer felt that his score was, as yet, too small to present. Only G3HJL has had the courage to send in his single country score (DL6ZF worked on 15th Jan on 3520 Kc/s with one watt input). I am rather surprised that we haven't heard from 'Monty' as he must be as well situated for this contest as he is poorly placed for the "200". Come on everyone, don't let HJL get away with it!

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-----THE QRP C - Z PANEL-----

Peter Huntsman is certainly building up an early lead here. I have just turned up the March 1951 issue and find that, while he

30/16

was leading even then, he could only muster 84 countries. Other entrants who were running then were better off in 1951 than they are this year however. It is nice to have some new names in the list this month and it looks as if Peter may have to watch his step as Bryan Read has jumped straight into second place! I hope that Bob Kenyon will let us have fuller details of his scores next time.

	COUNTRIES				C Total	ZONES	Grand Total
	3,5	7	14	28			
P. Huntsman	12	37	93	-	96	29	125
B.J. Read	10	8	61	-	62	23	85
E.W. Gardiner	20	11	44	6	56	18	74
R. Huntsman	4	24	38	-	50	15	65
H.G. Wells	-	9	24	29	31	16	47
R.L. Kenyon					29	13	42
D.G. Gordon	10	8	23	2	29	11	40

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PROPOSED V H F SECTION.

We have quite a number of members who are interested in VHF and, in this month's Tx Activity, G2DHV makes it clear that QRP is worthwhile even at 145 Mc/s. We feel that much useful work could be carried through with a little determination and cooperation by our Society in this increasing field of activity. Our entire organization started with an active membership of only two, so very little impetus is needed to launch a section which has such enormous interest and such vast possibilities.

Your comments would be welcomed.