

-No-

-19-

# QRP

APRIL

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DEDICATED TO THE  
ADVANCEMENT OF  
LOW POWER RADIO

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## EDITORIAL.

One of the disadvantages which I suffer from filling the whole of my spare time with the organisation of our Group and it's mag is that I haven't time to attend the meetings of local clubs. A friend dropped in the other evening to report on the --- and District R C's latest gathering. "Oh, and by the way," he said, "A couple of chaps were pulling 'QRP' to pieces when I got there. I didn't hear the start of the arguement but they certainly didn't think much of one of your circuits."

Now I should have liked to hear those criticisms. I should have learnt a lot. You chaps, in personal QSOs together, will discuss "QRP" and argue the merits of it's contents. A great many of you frequently write to me and tell me how much you look forward to the mag, a fact which, of course, I fully appreciate. But very few of  
(continued on page 9)--

THE G3EDW Tx ADDENDA.

Herewith the component list for EDW's Tx which was unfortunately left out of the original article last month. I'm sorry about this slip, OMs, and many thanks for your several letters pointing out the lapse. The list is as follows:--

C1, approx 250 pF, bandset. C2, 100 pF, bandspread.  
C3, C4, C12, .001uF mica. C5, C7, C11, 100pF, mica.  
C6, C9, C10, C15, .01uF, 400v. C13, .005uF, 500v. C8, 160 pF.  
C14, 200pF (ex T1154). R1, R3, R7, 100 K,  $\frac{1}{2}$ W. R2, 20 K, 1W.  
R4, 1 K, 1W. R5, 40 K, 1W. R6, 25 K, 2W. R8, 500 ohms, 2W.  
V1, 6F50. V2, 6SH7. V3, 6AG7.

Note: The spindles of C8 and C14 are at full HT potential.

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GROUP Q S L CARDS.

First deliveries of the new cards will be despatched before the end of the month and all outstanding orders will be executed by the middle of May. I regret the delay in getting these cards to you, OMs, but I am sure that the final results will prove well worth it. I have already received initial samples which I have returned with a number of comments which should make for excellent production batches. The new price will be 8/6 per 100 and any quantity from 50 upwards can be accepted at this rate.

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HAVE YOU LISTED YOUR SURPLUS COMPONENTS AND SPARE GEAR ?  
 You will see by the lists published this month that the Group "Junk Box" is becoming quite a flourishing concern. Please do add your quota of spares. SEND YOUR LIST TO George Partridge, "Brent House", 17 Ethel Road, Broadstairs, Kent.

The QTH is on the south-east tip of Jersey and is the furthest station south carrying a "G" prefix. The station is housed in a bungalow which is surrounded by a small piece of land alongside a slipway down to the beach. At very high tides the wall at the bottom of the garden is pounded by the waves.

Five antenna are used. A 58 ft Windom, fed with 300 ohm line, is stretched between two steel masts, one 30 ft and one 15 ft high, sloping from NW to SE. On 7 Mc/s two lobes are produced, with four on 14 Mc/s, the result of the slope appearing in a distorted radiation pattern, no signals being transmitted from NW through W to SE; on the eastern side, however, reports of S8 and S9 from VK are regular occurrences.

The second antenna is a half-wave dipole for 14 Mc/s, sloping from the top of the tall mast to four feet above earth, and runs NE to SW with exactly opposite results to the Windom. No 3 antenna is a 300 ohm folded half-wave dipole for 28 Mc/s and this slopes NE to SW from the top of the shorter mast. A long wire antenna runs from the shack to a 20 ft lattice mast, then on to the other two masts in turn. This aerial is mainly used for 1.8 and 3.5 Mc/s and was originally put up solely for working the mainland. Finally a four-element rotary beam for 145 Mc/s is perched on top of the lattice mast and, later, it is intended to fix a 430 Mc/s array above this. All antenna are terminated inside the shack with two-pin plugs and a series of sockets are fixed on the inside of the window ledge so that any antenna can be selected for transmission, reception or both.

Two antenna couplers are used -- one simply a double spaced condenser of approx 100 pF which parallel tunes the feeders and is used on 28, 14 and 7 Mc/s with the dipoles or Windom; the other is a Universal Colloin Coupler so made that by altering the clips it

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will tune anything in any way from 28 to 1.8 Mc/s. During a spell of excellent conditions on 14 Mc/s lately a VK was raised, the antenna being a galvanised cloths line adjusted by the Universal coupler. The QSO was continued by using a single bed-mattress (metal) and the report was 449. A third coupler is "on the bench" and this will link couple all aerials to the PA. I believe that the Power Factor in many stations could be increased by carefully matching the aerial, and in QRP work this is vital. Very good articles have appeared in two prominent English radio mags on this matter and they are well worth studying.

On 14 Mc/s a coupler is used on the receiver, matching any aerial into the 400 ohms requirement, and results on the other bands would no doubt be improved by similar treatment. The receiving side of the station consists of an S640, a B2 (used mostly for monitor work, it's compactness making it ideal for the job), a two valve QRP using 6J7 - 6C5, and an Eddystone convertor for 145 Mc/s.

For transmission there are four rigs. First, the main QRO unit runs at 50 watts CW, with an 807 in the PA; modulation is supplied via a pair of 6L6 and a D104 microphone is in use. Next, a B2 which has been modified to cover 1.8 Mc/s and is a useful Tx for quick band changing coupled with ease of aerial connections. Thirdly a QRP rig employing a single 6C5 which achieved eighth place in the RSGB Low Power contest on 3.5 Mc/s. And, finally, a 145 Mc/s rig using a pair of 8012 in the final and modulated by the gear in the 50 watts rig from which it also derives HT.

A D2 wavemeter completes the layout and two keys are used, a straight model, vintage 1936, and a "side-swiper" made by GC3FMS.

Finally, if any of you come to Hersey, please do look us lads up -- there is an informal meeting of the QUA club every Wed at 8.0 pm t The Wellington, St Saviour's Rd, St Helier, and we always like to see visitors. And to all SWLs may I say please do enclose a **BAE** for replies to reports.      **Cheerio, 73, "Monty".**

TX NEWS

G5GG (Bournemouth) runs an all-QRP station. The Tx is a 1vCO (triode 6M202) with input of 1.8 watts max and 0.5 watt normal. His Rx is C-V-1 (two triodes) with 0.4 watts input. The antenna is a Skyrod 36 ft vertical Marconi. When both Tx and Rx are live the total consumption (Rx plus Tx and HT plus LT) is still only 3 watts. We should like a full description of the whole layout, so do give us a write-up, OM, will you?

G3CED (Broadstairs) has been almost QRT due to pressure of work, but the rig is beginning to get a little attention again. The Tx is a 6L6 CO working entirely off 240v DC mains, the input being limited to 5 watts max by a pot in the HT line. The Rx bank contains a BC342N, a 21 set, an 18 set series and a C-V-1. The antenna is 137 ft VS1AA tap, N & S, 40-45 ft high. George has a regular sched with OZ5U (of Nyborg) who operates 20 watts from DC mains to an indoor antenna. The scheds are for every third day (April 1st, 4th, 7th, etc) on 7040, 7022 or 7050 from 1200-1230 GMT. SWL reports are welcomed and QSLs are guaranteed for USEFUL reports.

GC2CNC (Jersey) mentions that the Ukrainians in his current Trantest entry were collected during a Russian contest. Some British "hams" have expressed incredulity at Monty's QRP achievements and he wonders if, perhaps, they fail to allow for the fact that many of their 150 watt signals produce only one S-point more than a one watt signal. He has had two unusual QSOs with U22KAB who gave him T7 and T6, yet, he says, he is rock-bound and following contacts have given him T9x!

PA0XE (Rotterdam) has made some interesting tests on 7 Mc/s. He started QSOs with 25 watts, mostly in the quiet morning hours, with Gs, DLs, and other Europeans. Asking for reports on a test, but not saying what he was doing (in order to get unbiased reports)

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he reduced to 0.5 watt, recalled and completed the QSO. Eleven reports have come in of which 7 claim a drop of one S-point and 4 say there was no difference save for an increased tendency to QSB. These revealing tests do make one wonder if all those people who bemoan the fact that they cannot "get out" on QRP would not be wise to look elsewhere than in the Tx for the cause of their low efficiency.

G3HCW (Pontefract) comments in much the same way. He has continued his QRPP experiments and finds that reducing from 1 watt to  $\frac{1}{2}$  watt makes only  $\frac{1}{2}$  to 1 S point difference, but he has found it a lot more difficult to "raise" stations with the low power. HCW adds: "Anyone who uses the single valve CO knows that if keying is done in the HT line it is not possible to load up the antenna to full output without introducing chirp, and if the xtal is at all sluggish it becomes difficult to key at all, especially the dots. I have changed over to grid-block keying, using a worn out HT battery as "stopper". I find it now possible to load up to maximum output and also the keying characteristic is greatly improved; incidentally this system renders key-clicks almost non-existent.

G5QI (Henley-on-Thames) has had contacts with 3EDW, 3CED and 2AJU and is on the look out for other Group members. He says that his antenna puts a very good signal into Europe and he is planning to increase his Trantest score next month by reducing power to .5W.

G3CHE (Huddersfield) has nothing to report on the Tx side this month as he has had a breakdown in the Rx works and has spent a good deal of time effecting repairs which were followed by several major modifications including an extra output stage for an LS, an S meter and a new 90 ft long wire.

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On April 27th an informal meeting of all Home Counties Groups of the ISWL will take place, assembling at ISWL HQ. Next month's "Q R P" will contain a full report of this interesting event,

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### SWL ACTIVITY.

D. White (Kingston) has begun a reconstructional campaign to include a fully switched Rx covering 2000 to 2 metres. Two switched detector circuits will be used -- O-V-2 down to about 20 or 30 Mc/s and super-regen below that. Mains and battery power will also be available by switching.

J. A. Brett (Manchester) has migrated to the 2 metre band with a new super-regen Rx ("with HF stage", he is careful to announce) and, though he hasn't received any amateurs, he has had proof that the gear is in good order by numerous "talk-you-down" scheds on 119.1 Mc/s from the local airport. He asks for gen on suitable HF stages as he has failed to get any "gain" from his. Well, OM, there is not a lot in the way of gain to be expected from an HF stage on two. It is necessary to act as a buffer but you will not get a lot of boost out of it.

Mike Wassell (Birmingham) who has sent in so many excellent logs in the past, has been entirely QRT lately owing to pressure of work, but he says the crisis is passing and he hopes to be with us again shortly.

Harry G. Wells (Waltham Cross) has just completed a re-build. He is still O-V-1 but now has a pentode detector. "If only I could push up my antenna a few more feet," he says! Incidentally, Harry has just completed his first twelve months as an SWL and has gained 30 zones and 90 countries in that time, all on QRP.

Ron Turner (Brierly Hill) is another who has been busy with the iron. A new mains/battery O-V-1 has taken shape and is proving itself well worth the trouble. The calculated consumption is one watt and meter readings show the "actual" to be even less. He will be using the new rig for the ISWL Inter-Dx Contest in which the QRP Group will be entering two teams. Good luck with it, Ron.

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W.F.Pothecary (Kettering) has erected a new antenna using some one foot ex-gov copper rods. It is sixteen feet long, bent into two elements of 8 ft, three inches apart, the ends both joined to the same feeder, giving, in effect, a flattened continuous loop. He says that this unusual rig gives better results indoors than his previous 40 ft outdoor job ever achieved.

P.Huntsman (Hexham) has been doing a lot of listening on his O-V-1 on twenty and has had some very good Dx in the afternoons. He has now acquired a 1224A Rx which takes 1.04 watts from it's own power pack and is, he says, the best Rx he has heard for signal to noise ratio

Ian Glenn (Coldingham) is still using the O-V-1 which he built from Bob Brooker's description in the July 1950 "Q R P". He says it gives a very fine performance. He will be using this rig, which is now rack-mounted on his desk, for the Inter-Dx Contest.

Geoff Hollebon (Southampton) has been running an 18 set but now has under construction a three valve super-regen for five and ten.

Peter White (Rushden) has promised to take up the construction of our experimental SH2 ("Q R P" No 18). Do keep us posted on this, OM, as we shall be particularly interested. On Easter Monday he gave the O-V-1 (two SP41s) an airing and collected a lot of locals such as ONs, SMS, DLs and Fs. In desperation he turned to the QRO Rx (2RF, 2IF and 3AF stages). The results were no better at all. It does just prove once more that because your QRP Rx is not bringing the Dx it does not need to be scrapped -- the chances are the Dx is simply not there.

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Thanks for all the above gen, OMs. It is a pleasure to have proof of your continued activity



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EDITORIAL (continued from page 1):-- you ever send in a letter saying "You're crackers, OM, it could never work that way!" You should do so, you know, if you think it. Criticism, rightly applied, can be a very healthy spur to improvement.

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TRANTEST.

	Best score to date	QSO with	Miles -M-	Mc/s	Watts -W- -X-		Points -P-	Month's total
GC2CNC Jersey, C.I.	9350	ZB1BJ UB5KBA UB5KAA	1210 1610 1610	7 7 7	1 2 2	2 2 2	2420 1610 1610	5640
G3HCW Ponte- fract.	6330	SM5MX OH2TW DL7DO	865 1100 600	7 7 7	1 1 $\frac{1}{2}$	2 2 2	1750 2200 2400	6330
G5QI Henley, Oxon.	6180	DL1PM HB9JL OZ2LX	420 500 570	3.5 3.5 3.5	1 1 $\frac{1}{2}$	3 3 3	1250 1500 3420	6180
G5GG Bourne- mouth.	6020	GM3GUQ G2JF G3FOP	360 125 117	1.8 1.8 1.8	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	5 5 5	3600 1250 1170	6020
PAØXE	4080	No entry received this month						
G3EDW Rayleigh, Essex.	2464	DL1JN OZ7AQ G5JP	265 520 40	3.5 3.5 1.7	2 2 2	3 3 5	397 780 100	1277
G3HBI Herne Hill.	1713	DL5BS OK1AEH DL3GY	850 1000 720	7 7 7	3 3 3	2 2 2	567 666 480	1713
G3EKP	1113	No entry received this month						
G3CED	960	No entry received this month						

FORMULA:-- P = M x X ÷ W

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Trantest is growing steadily and the increasing interest expressed by many members, including others than those already participating, is an encouraging indication of the enthusiasm which eventually will surround the tussle for the Kaleveld Cup, to be contested in September. These monthly Trantest entries may well be regarded, not in any way as eliminating rounds, but as excellent practice sessions for the Kaleveld Week.

I am sorry to see that three Trantest enthusiasts have not put in entries this month, but always circumstances will arise which will prevent a "full house". On the other hand we have three new call signs appearing this month and we welcome them with much pleasure. There is, of course, room for many more -- infact we will willingly make room for everyone in the Trantest Panel. And we hope that everyone will do their best to send in regular entries, even if they are less good than some previously submitted -- the better the score the greater the handicap against further improvement. But regular entries, even if poor by comparison, lend added interest to the panel. Nor is it ever too late for an initial entry since one really good score can go right to the top of the tree -- but it will have to be a good one, judging by the challenge GC2CNC has already given us!

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A Q R P CALL BOOK.

There are many very useful functions which the enthusiasm of our Group can fill. Widespread as we are we have a pronounced advantage in coverage for a monitoring service and a really valuable work could be achieved in the compilation of a "Q R P Call List" in which details of all stations known to work (wholly or partly) on Low Power could be accumulated. All members, both Tx and SWL could play a part in this service and the results would be interesting to ourselves and of considerable use to other radio spheres.

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It is a tremendous task and one which, indeed, can never be entirely completed; but the use of such a list should be obvious from the very start and, I am sure that every participant in it will find an added interest to his time "on the air".

Keep that note pad and pencil handy on the bench, OMs, and do remember to jot down all the details you can collect of any call emanating from a QRP source. And, by "QRP" I mean Low Power as we use the term -- FIVE WATTS and under. Let us have all the details you can catch, but, if it is only the call sign, send it in just the same. Other members may send in details which will check up with yours. This idea is not in any way an attempt to cut across the existing R.A. Call Book -- we want more than just QRAs, and if everyone will try -- and keep on trying -- we shall be able to produce a list of calls, QRAs, times, frequencies, power and so on which will be a very solid proof of the value and earnest intent of our growing organisation.

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THOSE FKS8 STATIONS.

P. Huntsman's query about these stations has been answered by a number of members and it appears that they are in the French occupation zone of Vienna. They must, therefore, count as Austria. G3EDW has worked three of them and says they all QSL'd very promptly. Reports should be sent via R.E.F.

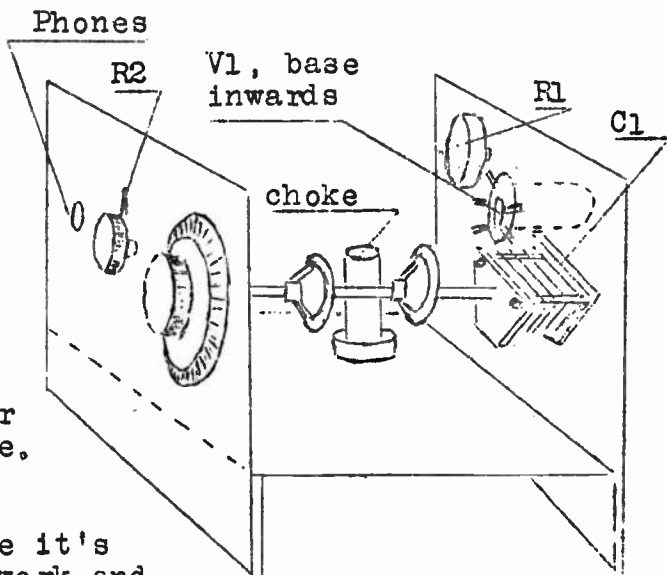
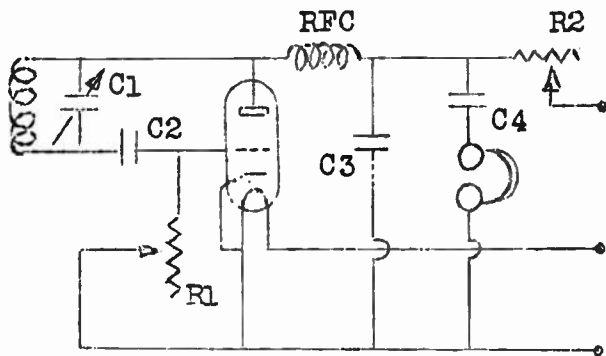
G3EDW also points out that American Forces in Austria use the prefix OE13 and that they also oblige with cards.

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You are not submitting your TOP BAND LOGS, OMs. Nor have any VHF reports reached me this month. Please don't wait for those extra Dx results -- send in your monthly reports regularly.

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A FUNDAMENTAL CIRCUIT FOR TWO, by L.R.HUTCHINGS.



- V1, 6C52.     C1, 40pF (Raymart).  
C2, 47pF.     C3, .002uF  
C4, .05uF.     R1, 1 meg, screwdriver  
R2,  $\frac{1}{2}$  meg.     type.

This little receiver, despite it's apparent simplicity, does really work and has proved it's efficiency in the hands of it's owner who says that, after initial tests, although he did not manage to find the two metre amateur band, he did get many signals coming in on the nearby aircraft and police bands, and on several occasions he heard AA and RAC patrols on their way to car breakdowns. It is not surprising that the amateur band was elusive -- compared with 14 Mc/s, two is like looking for the proverbial needle and only experience coupled with a certain amount of trial and error will finally locate it.

One point I must stress; L.R.H. has given us what I have called "the fundamental" circuit, but it should be the abiding rule of every user of such a set to include a RF stage in front of the super-regen circuit. On high frequencies no great gain will be effected by this extra stage, but without one a heavy radiation will take place, sufficient in some cases to cause interference over a wide area. The RF stage acts as an efficient buffer and adds more than one advantage in other directions such as stability and the minimising of "dead spots", reduction of hand capacity and so on. Moreover, if the extra stage is tuned it will go far towards counteracting the chief weakness of the super-regen receiver which is its notable lack of selectivity.

L.R.H. describes his set as follows;-"Across the tuning condenser is mounted the tuning coil. I did not have much success with an aerial coupling coil so I discarded it (another difficulty which would have been put right by the RF stage, OM). I mounted a crocodile clip on the end of the feeder so that I could clip on anywhere on the condenser or coil. To the tags on the condenser I soldered two sockets from an old four pin valve base. I can therefore plug any size of coil direct into circuit with the shortest possible leads. The coils are made of 16 gauge tinned copper wire and are of one, two, three and four loops about 1" diameter. The choke is a small ex-WD one, chassis mounting, about  $1\frac{1}{2}$ " high by  $\frac{1}{4}$ " diameter."

The front panel and the chassis are of aluminium, the panel being six inches square. The rear panel, however, is made from "Bakelite", though tuffnol would probably be better and less breakable. For the highest possible efficiency, of course, polystyrene would be the best choice, and a six by six sheet would not be too expensive, but it would require extra support.

Though the basic circuit is not original, the inclusion of the potentiometers in the grid and HT leads is a refinement which L.R.H. claims to be of considerable help in stable control. It will at

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once be apparent that considerable thought has been given to the isolation of hand capacity, even to the extent of mounting the EC52 valve out behind the rear panel. This may at first appear an awkward method of assembly, but it is all to the good as far as interaction goes. The drive to C1 is taken through two flexible couplers which not only allow alignment of the shaft but also insulate it electrically.

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NOTES and NEWS, by BOB BROOKER.

Surely conditions on the amateur bands have not been quite as bad as they would appear, judging by the lack of reports received here! Or perhaps conditions are too good and have not left you time to write?

Harry Wells has now got a new Rx working and has logged KG4 and MI3 on twenty metres. On his first test of the new rig he was pleased to hear DULAL which is really nice going and good Dx under any circumstances.

On Top Band Harry is hoping to be able to get some good results later on when he has completed some modifications to this Rx. At the moment he has a lot of trouble with the second harmonic of the Brockman's Park BBS station which is only five miles away. He quotes G2AB as saying a great deal on the same subject. At times it is so strong as to make any working impossible, especially in wet weather.

And now, in case none of you have heard about it yet, AC4NC is active on 20, and is believed to be genuine; so keep a lookout for him and make sure of nailing Zone 23 if you still have it outstanding.

(Don't leave it all to Harry, OMs. Send any interesting news to R.J. Brooker, 77 The Cottages, Rosendale Rd., Herne Hill, SE24.)

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S A L E S : E X C H A N G E .

QRP JUNK BOX.

WANTED:-

- 1:--Miniature tranny, 4/1 intervalve (Exchange any Junk Box items)
- 2:--Complete set four-pin plug in coils.
- 3:--Crystals for 1.7 to 1.8 range.
- 4:--100pF variable condensers.
- 5:--URGENT--25L6 and 6K8 valves,

ALL ENQUIRIES TO :--  
GEORGE PARTRIDGE, G3CED,  
17, ETHEL ROAD,  
BROADSTAIRS, KENT.

SALE:-

- 2:--Setchell Carlson midget radio range Rx. £2.0-0.
  - 3:--Brand new dinghy radio. £1-10-0.
  - 4:--Power unit, type 285. £2-10-0.
  - 5:--Three Eddystone 6-pin coils, 11-100 metres, 2/- each.
  - 6:--Eddystone bandspread tuning unit, dial knob and pointer, for use with above coils. 4/-.
  - 7:--Small LF output choke. Cost 8/-. Accept 3/-.
  - 8:--"Raymart" reduction drive. 1/-.
  - 9:--Mullard PM2HL, unused. 3/-.
  - 10:--Small output tranny - "Premier". 2/-.
  - 11:--Eddystone HF choke. 1/-.
  - 12:--Capacitor, 2 MFD. 1/-.
  - 13:--Mullard FC4 unused. 5/-.
  - 14:--Bedside radio cabinet, white wood, unmarked, LS grill on right 8" high x 12" x 5". 7/6.
  - 15:--10 x 2 MFD 800v wkg. 4½" x 2" x 3". 1/3.
  - 17:--Mallory vibrator type 9546C, 12v input, 5½"x3"x5". 5/-.
  - 29½:--RX Senior energised LS, 1000 ohm field. 7/6.
  - 30:--TCS5-TCS12 (Tx-Rx), complete station. Details on request.
- .....AND MANY MORE ITEMS of all kinds which we have not space to quote. Send a S A E to George Partridge with your enquiry.

PLEASE QUOTE THE  
REFERENCE NUMBER  
SHOWN AT THE LEFT  
OF EACH ITEM.

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"Q R P" C - Z PANEL.

1951 Series	Megacycles				Total	
	3.5	7	14	28	C	Z
P.Huntsman	16	39	110	10	116	35
H. G. Wells	14	4	48	--	57	20
D.G.Gordon	18	11	49	11	57	19
D. White	2	3	25	3	30	12

Well, there are certainly some changes developing here this month! Peter Huntsman has made a grand increase in his existing lead and a real scrap seems to have opened for second place with H.G.W taking the initiative by one zone. And David has made a good advance as well. We had fourteen in the running last year so let's have more entries next month to urge these four along.

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"Q R P" TWO - WATT PANEL.

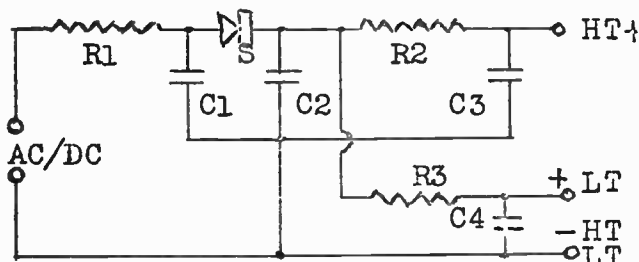
It's happened! 5QI has lost his lead. The threat developed last month when CNC was one point behind him, but there is something about that Jersey air -- or is it due mainly to those five antennas that Monty tells us about this month? Whatever it is GC2CNC looks like being a notable call in QRP radio contests. But I am sure that 5QI will not take this displacement without an earnest struggle. And, by the way, 5QI's 1.7 score IS 24 countries and 2 counties, not the reverse as has been suggested.



	TOTAL	Countries			Countries		
		1,7	1,7	3,5	7	14	28
GC2CNC	69	4	2	6	24	31	2
G5QI	55	2	24	16	13	--	--
G3HBI	14	5	1	--	8	--	--
G3HCW	12	--	--	--	12	--	--
G3EDW	9	5	1	3	--	--	--
G3EKP	5	1	1	--	3	--	--

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### Q, R P AC / DC MAINS UNIT.



This little mains unit was designed to supply the "personal" type Rx having an FC, LF, 2nd Det, AF line up. It will, of course be equally useful for any Rx using 1.4 volt valves. It can be built into a very small unit -- infact the prototype is small enough to slip inside a commercial "person-

al" in the standard battery space. One point should be born in mind -- the Rx valve filaments should be wired in series in the order AF - IF - FC - Demod reading from the LT + terminal.

Components are :-- C1, .01uF. C2, 32uF (300v). C3, 8uF (150v). C4, 200uF (12v). R1, 100 ohms. R2, 15K (2W). R3, 4K (10W). S, 60 mA Selenium Rectifier

Don't waste any more batteries if there are any mains handy.

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