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RESEARCH GROUP

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EDITED BY: J. Whitehead
6, Abbot's Tilt, Hersham
Walton-on-Thames, Surrey

Dedicated to the
advancement
of Low Power radio

QRP

No 10.

"Q R P"

June 1950.

EDITORIAL.

For many years now I have felt that the method of presenting Dx reports in most radio periodicals is a shameful waste of potentially excellent reference material.

Many such reports are the results of long hours of concentrated listening which, if fully tabulated, could be combined into a valuable record. The usual presentation of a block of call signs under an operator's name gives the reader no other information than that A, Blank of Stillblank heard these calls sometime during the past thirty or so days. That may be a sop to the self-esteem of the individual concerned, but it is of little value to anyone else.

"Q R P" has consistently endeavoured to collate such reports into a form which will give the reader (a) an idea of what calls were "available" at any particular hour on any particular day, (b) a means of checking any doubtful calls he has received, (c) a guide as to optimum listening times, (d) reception conditions in various localities, and so on.

Our 14 Mc/s report this month is laid out in a modified form which, I hope, will make these points even more easy to check. I believe that logs compiled in this way may become a feature of real value instead of a mere ornament.

THE SPIRIT OF AMATEUR RADIO.

So much has been written on this subject in the last twenty years that it would be presumption on my part to enlarge on it here here. An outstanding example of this "spirit" however has recently been demonstrated within our own QRP Research Group which is worthy of mention.

A Group member advertised, not long ago, certain pieces of equipment in Gear-change as free for the asking. Another member wrote saying he would like some of this gear and shortly received an answer expressing regret that the parts had already been despatched to an earlier claimant. But that answer was enclosed within a large parcel of other miscellaneous gear, all in first class condition and all of great satisfaction to the recipient. There was no charge, even for postage, attached to this unexpected gift. It was a complete example of spontaneous generosity.

Don't think that I am suggesting that we should each promptly part up with all our favourite junk. I only want to show that the Amateur Spirit -- that desire to help the less favoured or the less experienced in any possible way is still alive. And I am very proud that it should have made it's appearance within our own Group.

ISWL AMATEUR AWARD CONTEST No 1.

Congratulations to you, East Brighton!

Congratulations especially to J. Davies who proved once again how well a QRP rig can hold it's own, Well done, OM.

MORE ON THE O-V-1 BY RON FINCH.

First, an apology for two errors in our presentation of this rig last month:- (1) There should have been no supressor grid connection shown for the KT33C. (2) The value of R7 should have been 200 ohms, not 200 K. I hope that anyone who has constructed the set in the meantime will have noticed these errors before condemning it for inefficient bias.

Secondly, Ron has sent in three modifications which he suggests are likely to improve performance:-

(a). Regeneration may benefit by the reduction in value of C10 from the specified 0.01 uF to 0.005 uF.

(b). Any tendency to hand capacity may be effectively cured by inserting an HF choke on either side of the speaker transformer primary.

(c). Aerial tuning may be introduced with some benefit by replacing the fixed capacitor, C2, by a 200 pF variable.

"SHORT WAVE NEWS".

Are you a regular reader of SWN? If not I would say you are missing a vital part of the hobby. I regard that mag as an essential for every listening post. It has appeared on my desk regularly each month since it's first issue (together with RADIO CONSTRUCTOR), and that is more than I can say for ANY other mag.

To members of the QRP Research Group the importance of SWN will be increased from the June issue as, commencing with that number, we have been afforded the use of a regular column for our

Group news. That is another healthy stride forward which not only demonstrates the rapid growth of our Group, but gives us also a chance to indulge in some of the finer touches of the publisher's art which I have been unable to introduce into the duplicated format of "Q R P".

Don't forget that QRP Research Group members anywhere in the UK can have the NEWS posted to them for 1/1 (or 13/- sub), but please let me have your instructions before the end of each month as I have to pass a bulk order to HQ well ahead of publication date.

NOTES ON CONDX, by BOB BROOKER.

I have been having a "go" at top band this month, and, although the season is really over for that band, it is sometimes possible to get something really good if one is listening just at the right moment. Such a moment seemed to occur on Sunday April 30th at 2255 GMT when I heard two UAs on CW, both RST 559. I have been assured by several people that this was impossible and that they must have been pirates, but personally I don't think so and I have sent off my reports to bok 38!

I have also ventured onto 80 metres, at disgustingly early hours, on three occasions when the Ws have been coming through -- not in quantity but with surprising strength. It would appear from this that the coming of summer (?) has not caused this band to close down entirely as regards Dx.

I'm afraid I can't work up any enthusiasm for 40, so let's pass on to 20 metres. Short skip on this band has been rather prevalent, making things a bit tricky. Mornings have generally

been good and the month has produced eight new countries and one new zone for me, so I'm not grumbling! HC8GRC was very prominent during the third week of April, but he seems pretty quiet of late which may be because of conditions or because he has gone home to Ecuador.

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PORTABLE Rx CONTEST -- AUGUST HOLIDAY EVENT.
.....

August is usually regarded as a period during which it is advisable to "lay off" contests. "Q R P" (obstinate as ever) is of the contrary opinion and has cooked up a bit of fun which it is hoped will actually add a trifle of zest to the holidays instead of interfering with them.

The object of the contest is to give all those really "pocket portables" an airing. The rules are as simple as possible and all the snags and restrictions have been reduced to a minimum.

CONTEST RULES.

DURATION: The logs sent in should cover one hour only during ANY day from Aug 1st to Aug 31st. Thus you have thirty days in which to obtain the best possible log. More than one log may be submitted from which we will select the best one, but if this is done each log must be marked "Log 1 of 2" and "Log 2 of 2" etc beside your name at the top of the sheets, so that we may know that we have a selection to make.

LOCATION: Your receiving post **MUST** be set up out of doors (and the back garden does NOT count!). If possible the actual map reference of your selected location should be recorded, but, failing this, describe the position of the site. Information should be

included as to height above sea level, general type of landscape (eg: "surrounded on all sides by dense forrest" or "top of a mountain in deep snow"), the apparent consistency of the soil and the general weather condx during your selected hour.

PORTABILITY: The size and weight of your gear (with batteries) should be recorded, with a note on any special features aimed at increasing ease of portability. This point should include antenna arrangements which, in "field-day" working give scope for great ingenuity.

CIRCUIT GEN: The usual full details of the Rx should be included, such as valve line-up, HT consumption, etc.

LOGS: These should be clearly written and kept seperate from any other correspondence. Put your name at the top, and try and include the precise time of each call, the band and, if possible, the call-sign of the station being worked.

JUDGING: The contest will be judged entirely on merit. No points or scores will be taken into account. The three best logs will be selected and from these the winner will be found by consideration of the most competant equipment and the best use of local conditions etc.

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Q R P C - Z PANEL.

Well, the panel is certainly making strides now. D.G.Gordon has found another ten countries during the month, but even so he has had to give best to our old friend Bert Glass who has turned up a heavy hand of trumps this month after a long absence due to concentrated constructional work. Bob Brooker, who stole the Jan contest from Bert with a really magnificent score, looks like hav-

ing to do some earnest searching during the next seven months to pull it off again, although he has improved his score a lot since

	MEGACYCLES				TOTAL	
	3.5	7	14	28	C	Z
Bert Glass (2597) Plymouth.	14	18	131	32	133	37
D. Gordon (2508) Bournemouth.	12	15	58	77	107	31
R. Brooker (3457) Herne Hill.	10 (1)	4	75 (3)	53 (5)	101 (8)	32 (5)
P. Short (3468) BAOR 15.	6	5	72 (6)	-	72 (6)	27 (2)
F.Herridge (3373) Balham.	15	38	59	33	76 (1)	23 (1)
Bob Murray (3038) St Andrews.	5	7 (3)	58 (7)	-	58 (9)	19 (5)
Ian Glenn (3036) Coldingham.	-	2	15	-	17	6

last month. Fourth and fifth places are a bit difficult to allocate but I have given the honours to Peter Short on the strength of his considerable lead in verified calls. (That is an excellent effort, Peter, in view of your experience at the game). Bob Murray comes in this month to sixth place on the score of calls claimed, but he has the lead of everyone in the matter of verifications and that will count well in his favour at the final reckoning if he can keep it up. Finally, Ian has found a few more countries and is likely to shake things up before long.

For the benefit of newcomers, the Panel works as follows:-

The column headed Mc/s shows the countries heard on those bands; the "C" column is the total of countries heard on all bands (NOT the sum of the figures in the Mc/s columns); similarly the "Z" column is the total of zones heard. The figures in brackets are calls verified by QSL.

Incidentally, a glance at the "Zones and Countries Roll, 1950" in Short Wave News (May issue, page 134) makes an interesting comparison with our own specimen. I suggest you send your results to them as well, Bert, and put a QRP rig at the top of their Roll! And all credit to D.G.Gordon for occupying their fourth place.

A WAVEMETER by RON TURNER.

You will see from the diagram that the wavemeter circuit is perfectly straightforward with nothing fancy about it. The 100 Kc/s crystal calibrator has been built in with the ECO section and is therefore ready for instant checking purposes. The fundamental range is 1.75 to 2.0 Mc/s. C5 is controlled by a 50-1 Muirhead drive. The data for L1 cannot be made absolute as, in view of varying constructional methods, trial and error will be needed to arrive at the exact dimensions.

It is suggested that the coil be wound on a smooth former and the last 6 turns spaced off from the main winding. The inductance may then be adjusted to bring the range on to the tuning scale by carefully sliding the small winding up or down the former a small amount at a time. This is necessary as there are only two degrees at each end of the dial "to play with". When the right position has been found coil dope or shellac should be used to secure the wind-

ing.

The Xtal calibrator may need a piece of wire wrapped round the Rx aerial terminal (from A1) to produce audible signals in the receiver. The ECO portion will only need about 8" of wire to produce quite strong signals even on the eighth and sixteenth (14 and 28 Mc/s) harmonics. On the fundamental and lower order harmonics it is advisable not to use an aerial on the meter as the signals will block the receiver, especially if it is of the O-V-1 or I-V-1 type.

The following calibration points may be useful. Assuming a 180 degree dial, 2Mc/s is about at 18°, 1.9 Mc/s about 58°, 1.8 Mc/s about 114°, and 1.75 Mc/s about 160°. Points at 50 Kc/s intervals may be taken by tuning the Rx to the 2nd harmonic of the wavemeter where every 100 Kc/s at these frequencies will be 50 Kc/s at the fundamental. The process may be repeated at higher harmonics to give more points for the calibration curve which should be carefully checked before inking in.

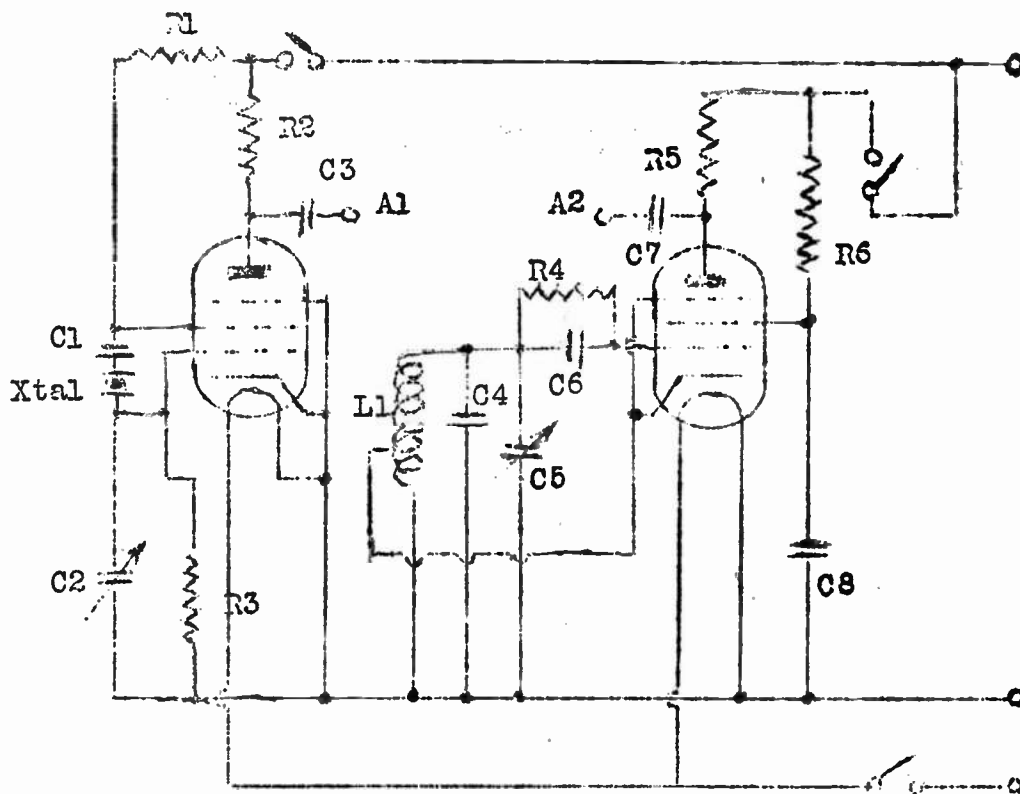
Finally, when calibrating the instrument, take off the receiving antenna of the Rx to avoid picking up any signal other than that of the meter itself.

The meter should preferably be enclosed in a metal cabinet and the calibration should be carried out while in the cabinet.

Slight drift will occur during the first fifteen minutes or so due to warming up, but after this it should be possible to obtain zero beat with Xtal harmonics which will hold absolutely steady.

The valves used in this particular case were EF50s but there is no reason why any similar type of RF pentode should not be used.

Values are:- C1, .001 uF; C2, 75 pF; C3 50 pF; C4, 150 pF; C5, 75 pF; C6, 100 pF; C7, 50 pF; C8, .001 uF; R1,3,4&6, 100 K; R2 & 5, 50 K; L1, 40 turns, 36 swg enamelled, on 1" diameter former.



Circuit for the Wavemeter by Ron Turner.

ACTIVITY.

C. E. Atherall (1668), Tunbridge Wells, having been well and truly tied up with business commitments for five or six weeks, managed to get one evening off and made a bold dash for the Rx only to find that the HT had packed up early as well -- such is radio! He says he is determined to get a receiver entered for the Carter Shield

G. H. Tillett (2663), Rainham, is now constructing Bob Brooker's O-V-1 and hopes to have it finished shortly. At the moment, however, he is having a bit of teething trouble with the tuning arrangements to say nothing of another case of flat HT and, worse still, a couple of valves that need replacement. It certainly rains in Rainham!

Arthur Looney (2959), Liverpool, has got bitten by the Tx bug. He paid a visit to G3DOK (also of Liverpool) who gave him a warm welcome and, in the course of the evening, Arthur burst on the air in QSO with a couple of SMs. Arthur went home at last wishing that his XYL was just a little bit interested so that she might share his pleasure. Imagine his surprise, then, when he found that she had tuned in the QSO and gave him a sound lecture on his accent!

Roy Nixon (3218), Stockport, has set himself quite a programme. After building up a power pack he means to rebuild his battery eliminator. A battery O-V-1 comes after that, then a wavemeter, and finally a "test-set". And, having a firm promise of a 40ft mast, there is also a half-wave di-pole in the offing.

Ron Finch is certainly getting down to business these days. In his latest letter he says: "I am evolving a 'super RF' QRP Rx, whereby great sensitivity is achieved without any AF background amplification noise, I have actually got the elements of this

working now in conjunction with my home built QRO Rx, a 3-V-2 (including the super-RF stages), and the sensitivity is equal to some communication receivers I have heard, without the terrific noise level."

TOP BAND Dx WORKED.

Peter Gollidge, G3EDW, of Rayleigh, Essex, has turned up a nice batch of top band QSOs on CW. During the month these have included:-

QSO with	Input (watts)	QTH	Approx Dx	Report on G3EDW
GDSUB	2	Ramsey, I O M	270 miles	569
G3AKU	"	Hunts	80 "	589
GW3TFWY	"	Port Talbot, Glam.	170 "	569
G5CRJ	"	Westmorland	230 "	349
GM3DUS	3	Glasgow	375 "	569
G3lp	0.5	Cheltenham, Glos.	100 "	569

L.G. Young, G5GG, of Bournemouth has sent along the best of his QSOs for the past year during which time he has consistently used a single valve battery CO (PM202) with only 1.8 watts max HT, the HT and LT together amounting to only 2.2 watts. Another point of interest here is that 5GG uses a "36ft vertical Marconi" (just a sky-rod and lead in). The main Rx is a O-V-1 with a battery RL224A (modified) as occasional stand by. 5GG's list includes the following, all on top band:-

QSO with	Input (watts)	QTH	Approx Dx	Report on G5GG
G2ELV	1.8	Oakham, Rutland	150 miles	539
G2ELT	"	Derby	160 "	549
G3FS	"	Hessle, Yorks	220 "	459
G5RY	"	Liverpool	200 "	569
GW3EOP	"	Port Talbot, Glam	120 "	559
G8HX	"	Mansfield, Notts	170 "	559
G3MHZ	"	Stocton-on-Tees	260 "	569
GM3ATV	"	Banff, Aberdeen	480 "	569
G3AKU	"	Huntingdon	150 "	559

THE TWO - WATT PANEL.

Peter Colledge, G3EDW, puts forward an excellent suggestion this month -- a countries and counties WORKED panel, covering the same bands as our existing C - Z panel but with the 1.7 band in place of the Z column; the maximum input to be two watts. Starting on the 1st June initial entries will appear in the July issue.

THE RX AT G3CTD.

George Partridge has taken me to task this month for the doubts I cast recently about the QRP qualifications of his Rx arrangements. He assures me that the total consumption is only 1.8 watts. Well, I'm sorry, George, OM, but the agreed absolute maximum for a QRP Rx is 1.25 watts (see page 97, April issue).

14 Mc/s LOGS FOR APRIL/MAY.

The numerous lists of 14 Mc/s logs received this month have been carefully compiled in order of dates and times. This we regard as a logical and necessary step towards the production of a really useful reference feature.

TIMES have been divided into eight periods of three hours each, and the number in the bracket following the date indicates the time-period by reference to the following list:-

- | | | |
|---------------|---------------|---------------|
| (1) 0001/0300 | (2) 0301/0600 | (3) 0601/0900 |
| (4) 0901/1200 | (5) 1201/1500 | (6) 1501/1800 |
| (7) 1801/2100 | (8) 2101/2400 | |

OPERATORS responsible for each entry can quickly be identified from the initials in the same bracket as the time index by a glance at the following table:-

- {PS}: Peter Short, 3456, BAOR 15; 0-V-1, 0.13 watts
- {SB}: S. Beharrell, 521, York; 1-V-2, 1.2 watts.
- {RB}: R. J. Brocker, 3457, Heme Hill; SH4, 1.2 watts.
- {RN}: Roy Nixon, 3213, Stockport; 0-V-2,
- {AG}: Bert Glass, 2597, Plymouth; 0-V-1, 0.5 watts.
- {RT}: Ron Turner, 2985, Brierly Hill, Staffs; 1-V-1

EXAMPLES:- To clarify any possible doubt the first date entry, for instance, would read: 3/4/50, Ron Turner, between 1201 and 1500; Peter Short, between 1501 and 1800; Ron Turner between 1801 and 2100.

REMARKS: I should be glad to have your comments on this new scheme. It is, I believe, the first time that any Radio Periodical has ever made any attempt at all to capitalise the valuable information submitted by its readers. If you find it an improvement please try and copy the layout when sending in future logs and DO PLEASE keep your calls in alphabetical order. That helps a lot,

2/4/50 (RF5) : PY6CO.
 (PS6) : CN80A; LU6AJ; SVØWL; VS7SV; ZC6DO; 4X4BL.
 (RT7) : AK2CC; SVØWB; VLIHQ; VS7SV.

3/4/50 (PS7) : ZC6DH.

4/4/50 (PS7) : CN8MZ; SVØWB, ØWL.

6/4/50 (RF3) : TA8CF, 9WC; VS7SV; ZL2JB.
 (PS7) : CN8BM.

7/4/50 (PS6) : CN8FX; FA8CF; MF2AA; PYLRC; 7XC; SVØWB, ØWL; VQ4NF;
 VS8BS; ZC6DO.
 (RT8) : MA9WV; PYLAFY, 1FC, 1SQ, 4VX, 4XI; VELZS, 2XO;
 VP3MCB, 4FN; YSLMS.

9/4/50 (PS5) : W3NA; ZC6JM; 3V8BB.
 (PS8) : EKLMQ; FA9WC, 9WD; OX3BD; PY2BF, 7FC; W2UEN; 3V8BB.
 (RF8) : EK1AD; FA3WD; LU6AJ; VELYB, 2HM; VP4TK, 7NU, 9ML.

10/4/50 (PS7) : CN8EI; EK1AD; VK2ABL, 2OQ; VP6IS; VQ4ERR.
 (RF8) : CE3CZ; CN8EI; EK1AD; NCLFG; OX3BT; SV5UN.

11/4/50 (PS4) : TA5GVU.
 (PS7) : FA8CF, 9WU, 9HS; SVØWY; VP6IS; VS7SV.

12/4/50 (RF3) : VK3AWW, 3HW, 3JD.
 (PS7) : MI3AB.

13/4/50 (PS5) : OA4M.
 (PS7) : AR8BC; TA9WU; OQ5CF.

14/4/50 (PS2) : EK1AD; NCLFG, 2KM; TA3GVU; W2APU, 2CZV; 3V8BB; 4X4BC.

15/4/50 (PS2) : W6YX; SVØWY, 3V8BB
 (PS7) : FA8CF; LU1AAP; PY2CK, 7XC, 8IJ; SVØWY, 5UN; VQ4NF, 4BC
 (RF8) : HK4BC; OX3BD; PY6CO; SVØWL; W9BPQ, ØIOB; YV5AY.

16/4/50 (PS2) : YV5BQ; ZB2A; 4X4BD.
 (SB3) : PY4RT; TILIT; ZB2A.
 (RF8) : MASAW; OX3BD; PY7DO; VP9F; ZB2A.

17/4/50 (PS2) : PY2AJ; TA3AF, 3GVU; W6DLN.
 (SB2) : VELES; VP3MCB, 6HL.
 (PS7) : AR8BC; VQ4SC; VS7SV.

18/4/50 (PS2) : TA3AT; T12HP; W6STK; YN4CB; 3V8BB
 (PS8) : CN8BD; FF8AH; LU6AJ; PY2CK; 4KL; V6LZS; ZB2A.
 (SBS) : V6LZS; VP3MCE, 6HL.
 19/4/50 (PS2) : HCLFG; 2KQ; LU7BO; MD2MD; PZ1Z; VK2VD; VS7SV; ZL3GX;
 3V8BB.
 (RB6) : VS7SV.
 20/4/50 (PS8) : AR6PP; PY7GC; VP4CK; 4X4BU.
 (RB8) : RH2W; KZ5AA.
 21/4/50 (SBS) : CM3CZ; FM7WB; HK1DZ; K04AZ; V6LZS; VP3LS, 9NN
 W4JEV, ØAHK.
 (RB3) : W6YX; YULCAG.
 22/4/50 (PS8) : CO8MP; CN8BA; CT3AK; FA3DS, 8CF; PY1RC; W3EOZ;
 YV5AB; 4X4BC.
 (SBS) : VK3QR; W6ASZ; ZC6DO; 4X4AL
 (RB8) : CE3CC; SP5AY; VP9KK; W5EFC; YV5AB.
 23/4/50 (RB3) : HC8GR0; HP1BR; PZ1Z; TI2JC, 2KW; VK3BH, 3BZ, 3HW;
 ZL3CV.
 (RB8) : LU6AJ; MD2FJ; OK3BD; ZB2H.
 24/4/50 (RB6) : RL2A; HK1AW; VP5AK; 4X4BL.
 (PS7) : SVØAG, ØWL.
 (SBS) : KP4AZ; PY4VX, 7LO; VP6IS; VQ4VL; VS7SV.
 25/4/50 (PS2) : MD2FJ; SVØAG; VK4WF; 3V8BB.
 26/4/50 (PS2) : TI2OA; W6DLN.
 27/4/50 (PS2) : W6YX; 3V8BB.
 (RB3) : X1LAC.
 (SB7) : PY1AQR; V6LGC; ZC6CO.
 28/4/50 (SBS) : LU6AJ; PY1TH, 2AW,
 (RB8) : MD2WE; PY1HH.
 30/4/50 (RB3) : UG6AB.
 1/5/50 (SBS) : LU4ES; V6LZS; YV5AB; ZB2A.
 2/5/50 (RB3) : OK3BD; W7HRV.
 (SBS) : CM9AA; CM3TI; ISLAYN; LU3DH; PY4KO, 6CO; W4CRI, 5AHA.

- 4/5/50 (AG5): ZL1QV, 3CC; LU9BO; CX6AF; VK2AYP.
 (AG7): AP5B; MD7WE; PK3SC; TF3ZM; UA9KCC; VK2VE.
 (SB3): PY1AQR, 6SI; VP3MCB, 6IS; VQ4RF; ZC6DH.
 (RB3): IS1AYN; VP3MCB.
- 5/5/50 (AG3): VE6DG; VK2GS, 3RJ, 3YL; W5DQH, 6AOA, 6ITA, 6QD, 7DET.
 (RB3): PY8RJ.
- 6/5/50 (AG3): VE7AX; VK3FH, 3ZM; W6GDJ, 6UJ; ZL3CX.
 (RB3): HC1FG; VK3GQ, 3HW; YN4CD; XELAC.
 (RB7): EK1WX; MF2AA; OX3BD; PY2CK, 4ZE; VP6IS; VS7SV; W7ESK.
 (SB7): PY2CK; 4X4AL
- 7/5/50 (AG3): KG6FAA; KH6VP; KV4AA; VK3ABH, 3VD, 5BO, 5BY, 5YF;
 W5LSO, 6RZE; ZL1DA, 1MP, 2ACV, 2LB.
 (RB3): VK4KS,
 (RB7): HA5B; LX1DC; OX3BD; P11LC.

GEAR CHANGE.

VALVES: 6Q7GT/G, 6J5GT/G, 6SN7GT/G, 6SK7M, 6SJ7M, 6J7M, 6C5M, 6X5GT/G, 1N5GT/G, DL35, all at 2/6 each; 6H6M, EB34 at 1/- each. American "Radio Handbook", 11th edition, 10/-. Premier A/C Midget TRF Receiver (working but needs overhaul), £2. Willing to exchange any of the above for useful BRITISH short-wave gear. J.A.R.Garner, 81 St Paul's Rd, Peterborough, Northants.

WANTED: A 68P receiver (the top band version of the 18 set.) G.A.Partridge, G3CED, "Brent House", 17 Ethel Rd, Broadstairs.

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OP-AID IS STILL AVAILABLE AT 1/4 POST FREE TO "Q R P" READERS.

A VARIABLE HT POWER PACK AND TRICKLE CHARGER, by G.H.M. YULE.

This power pack, designed for use with a 0-V-0 rig, was constructed from parts removed from an old Ekco mains unit with several surplus components added. The total cost, in my case, was 11/- and, with HT batteries costing 15/-, was well worth constructing.

The transformer was dismantled and repaired and the whole unit was reconstructed on an aluminium chassis, 12" x 7½" x 2½", all components being mounted on the top of this except the electrolytic reservoir and smoothing capacitors. A plywood panel was used as this was available and a distribution panel was fitted as shown in the sketch. The switch controlling the unit is a five pole double throw surplus job and only cost a shilling, but it is very robust and is ideal for switching HT "on" and Trickle Charge "off" or vice versa, giving complete isolation from the switch contacts.

A 0-300 DC voltmeter was fitted to the top of the panel to measure the output and two 0.2 amp torch bulbs were mounted in each line for fuses, though 60 mA fuses have since been added.

The remaining components used in the power pack are as follows:-

Transformer, 150 volt output at 60 mA and 2v 1A and 2v 2A.

Westinghouse 60 mA half-wave rectifier.

Half-wave rectifier at 2.0 volt 0.5 A for battery charging.

Smoothing choke, 60 mA.

Carbon resistor with adjusting clips, 131 K ohms,

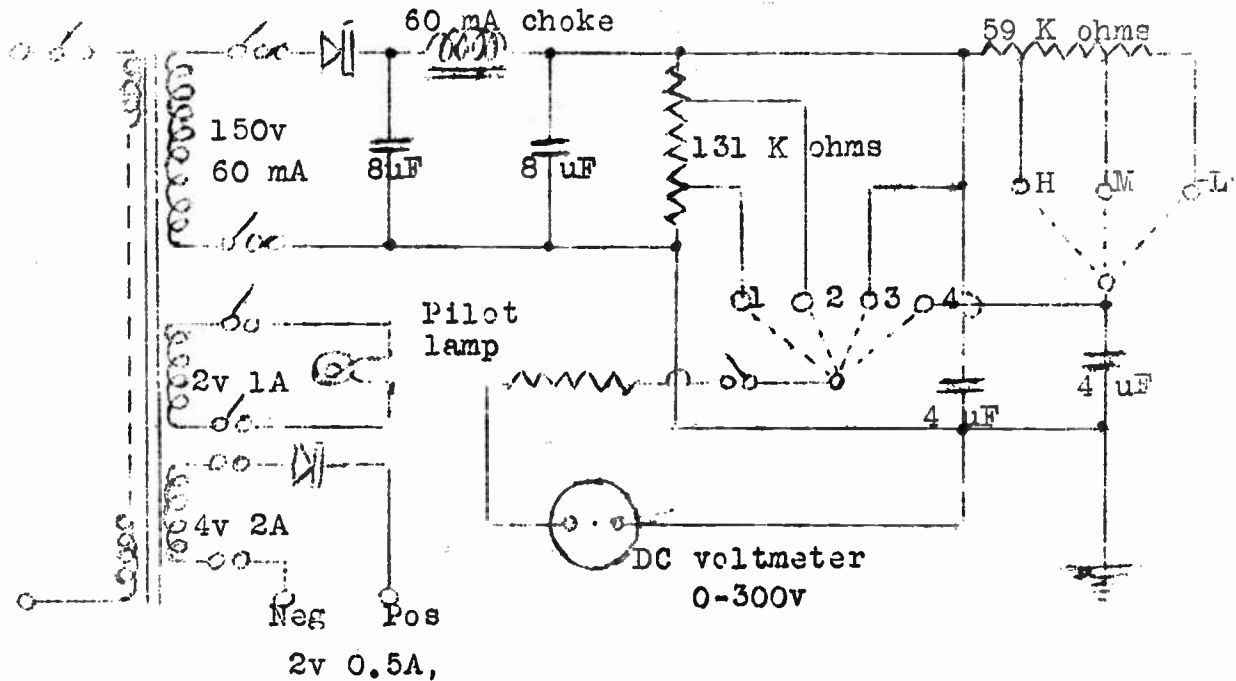
" " " " " 59 K ohms.

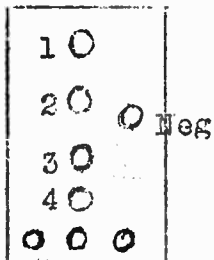
Two 3 uF and two 4 uF electrolytics.

One red pilot lamp and holder.

Although half-wave rectification is used for the main HT as well as for the trickle charging smoothing is very satisfactory with the O-V-0 rig and gives excellent results. It is realised that a larger output would have been better for the charging circuit, but the 0.2 amp charge which is available gives good results on long, slow charges.

A photograph of this pack with it's O-V-0 receiver will be appearing in a future issue of Short Wave News together with a full description of both units.





H M L
Panel
Layout.

Voltages on open circuit:-

Plug 1 - 90 volts	4 / L - 70 volts
" 2 - 112 "	4 / M - 100 "
" 3 - 150 "	4 / H - 125 "

GROUP JUNK BOX.

The following items are available in the "Q R P" Group Junk Box which is under the management of G3CED, George Partridge of 17 Ethel Rd, Broadstairs. Get in touch with him, OMs, if there is anything you want. Your particular requirements may not be mentioned here but the chances are that he may be able to put you in line with a source of supply:-

VALVES: 813 (2), L63, EF36, E37 (2), VR54 (3), VR136, 6AC7, VR91, VR92, VT52, VR503, V24.

Also available; a large assortment RESISTORS and FIXED CAPACITORS and a few VARIABLE CAPACITORS. One TU9B in case, good condition. One TR1196, Rx portion, valved, in good condition.

INTERVALVE TRANSFORMERS: assortment of 3/1 and 5/1 ratios.

Look out that junk of yours, OMs, and let George know what you have spare or for sale or exchange

In future please send your GEAR CHANGE items to George, not direct to me. He may have the answer already on his files. If not then your ad will appear in these pages just as they have done in the past. But give our Junk Box a trial first.