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L P R

No: 23

AUGUST 1951

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LOW POWER RADIO
RESEARCH and NEWS

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“ Q . R . P ”

No: 23
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EDITORIAL.

This issue marks our second anniversary. It should be an occasion for a bit of trumpet blowing, but I am saving that for our quarter-century issue, No 25, which will, I hope, be well to the fore on the I S W L stand at the R S G B Amateur Exhibition in November.

My foremost feeling at this moment is one of very sincere thanks to all you chaps for the fine way you have supported me through these two years. The underlying sense of pleasure at the undoubted success of our Group and of our mag could not exist had it not been for the staunch backing you have given me. They have not been easy years. Every effort to create progress and expansion has been met by some new restriction, and, with paper shortages and rocketting prices, the future promises a pretty grim struggle too; but a continuance of the wholehearted cooperation which you have given me so far will make it a very worthwhile and, come what may, a wholly successful struggle.

Already we have made our mark, clear, deep and true, by our performance in the ISWL Inter-group Dx Contest. By winning that cup we have effectively silenced the occasional good-natured sarcasm that was levelled at our "toy" receivers and have even caused our QRO colleagues to blow the dust out of their AR88s.

We have gained a reputation. Let us be very sure to keep it.

A O-V-1 by W.F.POTHECARY.

W.F.P. says that the rig here described is still "purely experimental". That may be, but the fact remains that, as it now stands it is sufficiently out of the ordinary in performance to cause the local CR, during a recent visit, to pocket the diagrams which had been drawn up for publication here and smuggle them off to his own shack! We received a duplicate copy in due course so we do not propose to take any further action in the matter except to report the CR's comments that he has never handled a TRF set that so nearly matched a SH for selectivity and sensitivity.

"The layout is not at all critical," writes W.F.P. (at his second attempt), "but the grid leads, etc, must be kept short. A good dial with a high reduction ratio is, I think, essential. I am using one from the 82 Wavemeter which is a 200-1 job and very nice. The tuning condenser, C1, is mounted at the rear of the chassis, through a coupler and extension spindle. Aerial tuning is very critical and must be experimented with for different lengths of antenna. The one in use at present, with a 40 ft aerial, comprises a coil of approximately 40 turns on a $\frac{1}{2}$ " former with a 100 pF variable in parallel" (as shown in the smaller figure) "and this tunes the set like a SH".

There is a rather striking point which our contributor has not mentioned. This is the fact that the Rx, with it's set of 708 type Eddystone coils, covers 28 Mc/s to 720 Kc/s. Now, that is quite a range by comparison with most of the sets which we have published in the past, and is pretty sure to produce some band which is working in the clear at any time of day - and if all else fails you can always enjoy the Third Programme

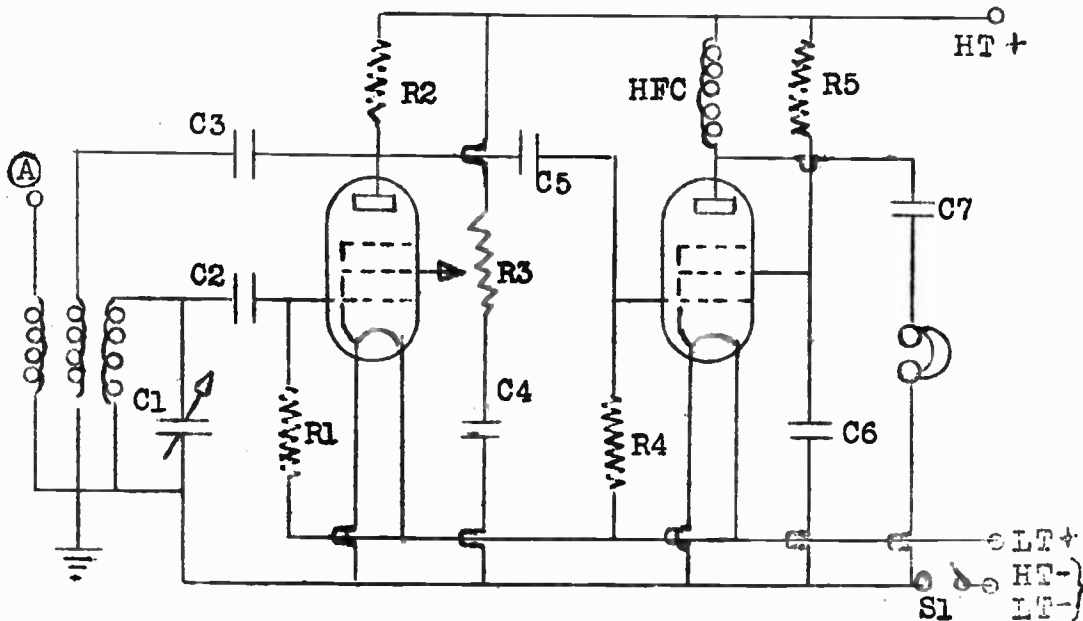
Since the battery requirements are very reasonable and the valves and coils are in the semi-miniature class it would appear

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COMPONENTS: C1, 140 pF, Eddystone 586. C2, 100 pF mica. C3, 100 pF mica. C4, 8 uF electrolytic, 150v TCC, CE18F. C5, .01 uF, 350v paper. C6, 0.1 uF, 350v paper. C7, 1 or 2 uF, 450v. R1, 2 meg. R2, 10 K. R3, 100-200 K. R4, 2 meg. R5, 470 K. HFC, Eddystone. Coil Base, Eddystone 707. V1 and V2, 1T4. Phones, 2000 ohms. S1, DPDT. HT, 45v to 70v for best performance. LT, U2 cell, 1.5v. Coils, Eddystone 706, to cover 28 Mc/s to 720 Kc/s.

All resistances should be $\frac{1}{2}$ watt.

If the addition of band-spread is considered an Eddystone type 580 Microdenser of 12.5 pF rating could be used in addition to the existing tuning capacity without undue variation of the ranges covered.



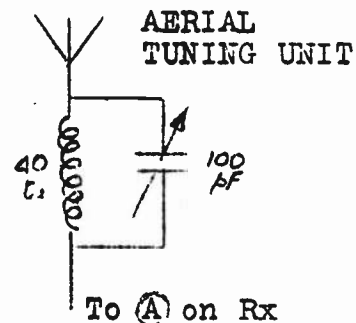
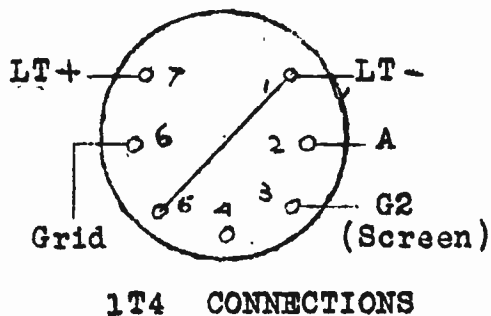
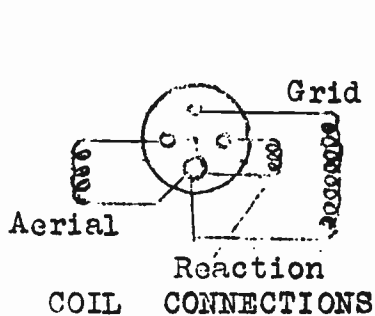
that the set forms the basis of an excellent portable station of very compact dimensions, while the inclusion of the aerial tuning unit is of great assistance when using "makeshift" aeriels.

The 1T4 valves used are B7G based variable mu RF pentodes in the 1.4 volt filament range and their physical dimensions are only $\frac{3}{4}$ " diameter and $1\frac{7}{8}$ " height when in position. They are designed for a MAX anode voltage of 90 with $67\frac{1}{2}$ volts on the screen, but normal operating conditions are:

ANODE VOLTS.	ANODE CURRENT.	SCREEN VOLTS.	SCREEN CURRENT.
45	1.7 mA	45	0.7 mA
67.5	3.4 mA	67.5	1.5 mA

They will still give reasonable results when the filament battery voltage falls as far as 0.8 volts, but this is rather detrimental to the life of the valve and it is advisable to renew the "U" cell before it's voltage falls to 1 volt.

There are seven coils in the Eddystone type 706 range and each covers the following frequencies: Blue, 33-15 Mc/s. Yellow, 16-6.7 Mc/s. Red, 7.5-3.1 Mc/s. White, 3.3-1.35 Mc/s. Pink, 1.4 Mc/s-720 Kc/s. Green, 750-300 Kc/s. Brown, 370-150 Kc/s. The dimensions of these coils are $\frac{7}{8}$ " diameter and $2\frac{1}{2}$ " overall length.



Rx ACTIVITY and NEWS.

MIKE WASSSELL (Birmingham) says he has just received QSLs from VP3MCB and UA9CL, the latter having taken one year and seven months to reach him. He still has not heard any Group station on 40 or 160 yet and hopes someone will swing the beam his way between 1830 and 1930 hrs for 40 or between 2200 and 2245 hrs for 160, phone or CW. Incidentally Mike is in a position to give very accurate frequency measurements.

RONNIE HUNTSMAN (Hexham): No, I have not made a mistake - Ron is Peter's brother! We have not had a line from him yet, but Peter has persuaded him to join the Group and, if the new member shows half the enthusiasm of the old one, we shall be well rewarded!

PETER HUNTSMAN (Hexham) has been QRT due to his period of "Z". Unfortunately this prevented his taking part in any of the recent contests, but it did give him time to write a record number of interesting and welcome letters to us. As a Z-man, Peter is a W-op in the Royal Signals and he seems to have made the most of his recent opportunities. At home he is rebuilding his 18 set to cover 10 and 20, and has cut his aerial to 99 ft and resoldered all the connections. Trying the new antenna on July 31st, between 1630 and 1700 hrs he heard CR9, UA9, VS1, VS6, VU2, MP2 and HS stations, all on 20.

HARRY WELLS (Waltham Cross) has been less active than usual, what with holidays and rebuilding operations, but he has picked up KH6AEX calling CQ on CW, and on phone he has heard HI6EC, MI3RP, ZD4QF and VQ5AU. And next month we hope to have another Wells in this feature - the junior op at Waltham Cross who, though not so keen on the SWL game, seems to be pretty hot on design and construction. Though only 13 he has already supplied the Wells shack with a number of items of test gear which have proved invaluable. At present he is working on a Xtal diode/one tube reflex circuit.

G. HOLLEBON (Southampton) took two O-V-Os out on Field-day, but results were very disappointing, Dx being as scarce as rain was plentiful. His 18 set is now working again and one of the O-V-Os is particularly good on 80, so we hope to hear more from him soon.

E.W.GARDINER (Diss) has been QRT for the past two months, due, unfortunately, to the continued serious illness of his wife. I do sincerely hope you will have better news very soon, OM. Please let us know how things progress - you have a very large number of friends in this Group who, though they have not met you personally, will, I know, be anxious to hear of your wife's recovery.

BILL HARRIS (Woodbridge) is having a good deal of difficulty in getting down to QRP limits. He has various receivers which, with reduced HT, should conform, but he finds it almost hopeless to do any regular work without an RF stage owing to the racket the fishing fraternity kick up in that area, with carriers "as wide as Broad St"! He has however done yeoman work as a member of the committee of the Ipswich and District Radio Club where an ISWL group has been formed and, with the enthusiastic help of Jack Cowles (2AJU), he has been stirring up QRP interest.

C.E.ATHERALL (Tonbridge Wells) has written to us again after a very long silence caused by the demands of work. He hopes to be getting rather more free time shortly. As a BC enthusiast he says he is sorry to see that the amateur bands remain the main interest of our SWLs.

H.E.JOHNSON (Birmingham) is a constructor after my own heart. It is all too seldom in these days that you hear of anyone actually making a receiver. It was a relatively common occurrence in the early days, but now the nearest we get is to assemble a collection of manufactured components. H.E.J., however builds everything possible himself and is now steadily working through a rewinding programme totaling some thirty coils ranging from HF tuning coils to the mains tranny windings.

I S W L FIELD DAY, as seen by ARTHUR LOONEY.

Much to my disappointment only two Research Group members appear to have made any effort to support this League event. As I have already reported above G. Hollebon of Southampton did go out "on location" but the results were a complete wash out in both senses. The only other participant was Arthur Looney.

Arthur (whose QTH is Knotty Ash, Liverpool) says:

"I set up my tent about $1\frac{1}{2}$ miles from my QTH in a field belonging to a local farmer whom I know and who is also a tenant of Lord Derby's in fact the site was only 1 mile due west of Knowsley Hall. Having nearly hung myself in getting the antenna up I did get started at 1110 with the results here attached. At 1430 hrs G3BWR, who is very interested in QRP and who had had the /P rig during the week I was away on holiday and had given it an initial try out, came along to see how I was doing and to help with any CW. But we didn't have very much luck - you see we are too near the Liverpool "hams" who do have quite a session on Top Band every Sunday; also the shipping gave a lot of QRM. Our best, though, was to follow after 1500 hrs when we changed the coil to 14 Mc/s. Our first CW station heard was KV4AC which was followed by W7OY and also W8IZQ with a later phone contact with an MD2."

"So we were able to pack up at 1700 hrs with a good heart, having got a new country in the bag and having had a very enjoyable time. It is certainly fun being /P. The rig used was a J-V-1 with 1T4 untuned RF, 1T4 detector and 3Q5G output. LT was supplied by a "P" coil, HT 90 and 60 volts. Antenna, 100 ft long wire, west to east, about 25 ft high between trees. The site was approx 125ft above sea level, and the whole rig was carried in the pannier bag on my James 125 motorcycle."

Many thanks for your report, Arthur. I only hope that our own /P contest will give you more scope - and more competition!

..... Q R P TRANTEST.....

	AVERAGE	QSO	MILES	WATTS	POINTS	MONTH'S
	BEST	with	-M-	Mc/s	-W- -X- -P-	TOTAL
1: GC2CNC	13520	SM3BZD	1180	3.5	3	14160
Jersey,	-----	HA4SA	1000	3.5	3	12000
C.I.	30720	G3GYS	380	3.5	3	4560
2: G5QI	10187	DL6HY	425	3.5	3	5100
Henley	-----	DL6OV	325	3.5	3	3900
Oxon	15300	DL1ES	525	3.5	3	6300
3: G2AJU	5761	(average)		No entry	this month	
4: PAØXE	4303	G2FHF	300	7	2	1200
Rotterdam	-----	SM1QX	750	7	2	3000
Holland	8680	G3EDW	240	3.5	3	360
5: G3HCW	3719	(average)		No entry	this month	
6: G3EDW	1830	(average)		No entry	this month	
7: G5GG	1618	(average)		No entry	this month	
8: G3HBI	1004	(average)		No entry	this month	
9: G3GZA	979	(average)		No entry	this month	
10: G3CED	780	(average)		No entry	this month	
11: G3EKP	431	(average)		No entry	this month	

This month's Trantest record certainly shows the effect of the holiday period, which, of course, is only to be expected and is entirely excusable, although it does have a bad effect on the maintenance of averages. Undoubtedly the predominant feature this month is the magnificent score which Monty has collected. Further details of this remarkable effort will be found in the Tx Activity column. It is nice to see Bill Carter keeping up the running for second place, and we note the Evert Kaleveld is quietly increasing his average month by month, so look out 2AJU - you'd better pull out a

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good score next month, Jack, OK!

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Q R P PORTABLE RECEIVER CONTEST.

If you haven't yet made up your mind to have a go at this "bit of fun" there is still time. It is the only contest of it's kind that has ever been devised, and has the most simple and unrestricted rules. All we want is the best log you can record FOR ANY ONE HOUR DURING AUGUST from any portable site (other than your own back garden). The 12" x 9" Certificate of Merit which is waiting to be won will go to the entrant who shows greatest ingenuity in the design and construction of his gear (especially as to portability) and the most competent use of the chosen site. Full details of this contest were published last month (page 22/2). Send in your log (from which the best three will be selected for judging on merit as above) and include a very full report of your gear and the site.

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Tx ACTIVITY and NEWS.

PAØXE (Rotterdam) has been on holiday, like so many more of us, and has thoroughly enjoyed "doing nothing" even from a radio point of view. The remaining two weeks of the month he found unusually troubled with thunderstorms giving very bad QRN coupled with generally low signal strengths - in other words, the summer slump worse than ever! He did manage a contact with 3EDW, however, as shown by his Trantest entry.

GI2DZG (Belfast) is another holiday maker and reports grand Wx on the County Down coast. He has acquired an 18 Tx/Rx and, though he has not yet got it working satisfactorily, he is hoping to do a lot with it and other QRP rigs this coming winter.

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G3EDW (Rayleigh) has spent most of his active time this month on Top Band, using 3 watts phone on local contacts. He has also been busy on constructional work and says that there is so much to do that he doesn't seem to be making much impression on it yet.

G5QI (Henley) has had a regular series of early morning sessions during July and finds that it certainly pays in freedom from QRM. Although no super Dx turned up he never had any difficulty in working DL, PA etc and found he could rely on getting 100% QSOs. At the beginning of the month he had a "very fb afternoon with 'Monty' (GC2CNC) in Oxford". They seem to have had a thoroughly enjoyable natter together on every QRP subject from Txs to contests and ended up with a visit to 8PX. Between them I think they have nearly converted 8PX to QRP

GC2CNC (Jersey) also mentions the pleasure which the above meeting with 5QI and 8PX gave him during his visit to England. I only wish that I could have joined you both, OMs! Monty reports that the Tx used for his Trantest score this month was a 3Q5 CO with 100 v HT as maximum at approx 10 mA, so that MAX input was 1 watt, and it was easy to reduce HT down to 9 volts with the valve still perking. The QSO with HA4SA was actually on 0.1 watts and occurred during a QSO with G8KP in the course of which 8KP asked him to listen for 4SA and a three-way ensued. 4SA gave Monty 549 for his 0.1 watt. The actual times of Monty's Trantest contacts were: G3GXS, July 1st, 0037/0050; SM3BZD, July 21st, 0004/0011; HA4SA, July 21st, 0042/0100.

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DO NOT FORGET THE R.S.G.B. LOW POWER FIELD DAY, SEPT 9 th 1951

The rules appeared in the Bulletin for June (page 466) and allow for the entry of individuals or of teams. The TOTAL weight of ALL equipment must not exceed 20 lbs. This is right up our street! It is the first contest of it's kind. LET'S GIVE IT FULL SUPPORT.

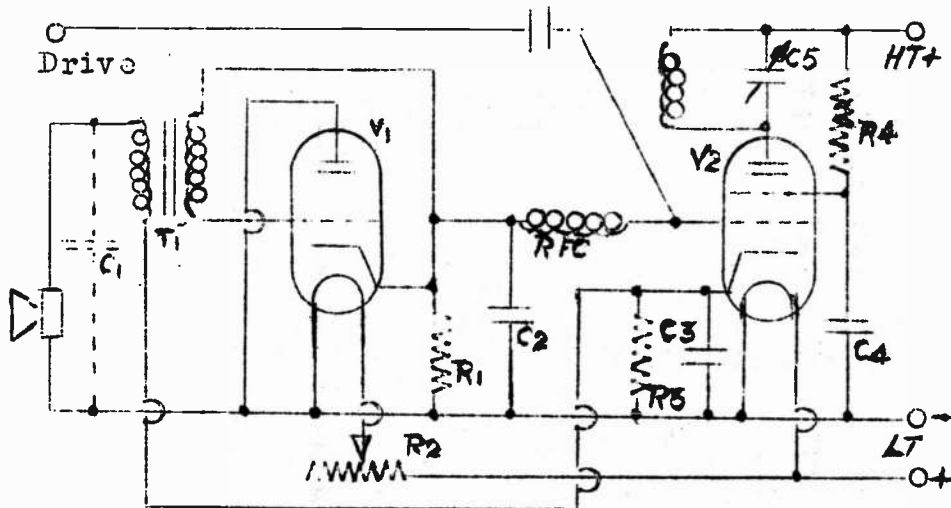
EXPERIMENTAL CIRCUITS? No 5: A Simple Modulator.

Fred Caton, who supplied the data on this rig, makes no claim to originality but points out that the addition of the variable resistor, R_2 , in the heater circuit and the method of obtaining current for the carbon mike makes it a cheap and easy way of getting on phone.

Component values are: C_1 , .001 μF . C_2 , .001 μF . C_3 , 25 μF . C_4 , .001 μF . R_1 , 500 K. R_2 , 15 ohms. R_3 , 300 ohms. R_4 , 30 K. V_1 , 6J5. V_2 , 6V6. T_1 , 100:1.

The impedance of the 6J5 is adjusted by the heater resistor for fullest modulation with PA loaded. C_1 may be included to bypass the mike if necessary for RF. R_3 is shown as 300 ohms but the value should be chosen to give approx 6v across the mike on load. Fixed bias can be applied between the anode of the 6J5 and the chassis if

desired. The modulator takes no current from the power supply. On application of drive to PA, 6J5 will conduct. It replaces PA grid leak and the carbon mike in the modulator grid circuit varies the 6J5 impedance. Best results were obtained with



about 2 volts on the 6J5 heater.

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Q R P CALL - BOOK.

Our Call Book is growing nicely, thanks to the watchfulness of all concerned, and will, I believe, form a really iseful reference when, in due course, we build it into a seperate publication on it's own. In the mean time we shall continue to make entries as they arise. This month's consignment are due to 2AJU, 3EDW and 5QI.

G3IFF : Portsmouth. 3 watts, single 6AG7 xtal osc, 3.5
Mc/s.

G2DJM : E.V.Chilton, "The Willows", Ichbero Rd, Mundford,
Thetford, Norfolk. 2 watts, 3.5 Mc/s

G3GVA/A: R.A.F., Compton Bassett, Calne, Wilts. 5 watts,
VFO-BA-PA, 3.5 Mc/s.

G3GYZ : William Wooller, 7 Neptune House, Neptune St, SE 16.
4 watts, ECO-BA-PA, 3.6 and 1.6 Mc/s.

G5DU : Harold Percy, 32 Larchwood Ave, Walkerville,
Newcastle-on-Tyne 6, 4 watts, CO, 3.5 Mc/s.

G3EEY : Exmouth. 5 watts, 3.5 Mc/s phone.

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A NOTE ON 18 SETS, by G3HBI.

"I have heard many people complaining that they couldn't peak up the IFs and sometimes that they couldn't adjust the frequency of the BFO. I found that this is often due to the dust cores being made in two sections, one the dust core itself while the other is a little piece of plastic material which is threaded and has a screw-driver slot in the top, by which adjustment is made, and to which the dust core is 'just stuck'. The adhesive substance is not very

good and the dust cores tend to break away and become lodged in the bottom of the hole. The cure is to withdraw the plastic part and then carefully poke out the core, a repair being made to the core and the set trimmed up properly."

(Bostick is an excellent adhesive for such a repair and makes a particularly strong joint. It should be applied, not too thickly, to BOTH surfaces and allowed to dry BEFORE bringing the parts together -- Ed.)

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THE KALEVELD CUP CONTEST

In our March issue we had the great pleasure of making the initial announcement of a special Q R P contest for which Evert Kaleveld, PAØXE, of Rotterdam, has presented a very fine trophy.

We have decided to make the contest an annual event, to be run during the last week in September, and we do really want ALL our Tx members to give us every possible support in making this a one hundred percent solid contest. Nor have the Group SWLs been overlooked, for a certificate will be presented to the listener member who returns the best report on the event.

As stated in the March issue, Evert has agreed to make the presentation of the cup and the certificate himself and the date of this presentation has been definitely fixed for December 1 st, in London, at a venue to be announced later.

The contest rules are laid out on page 16 of this issue, and do please watch the mag for any further announcements.

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TWO - WATT PANEL

	TOTAL	COUNTIES			COUNTRIES		
		1.7	1.7	3.5	7	14	28
GC2CNC	103	4	2	15	29	31	22
G5QI	55	24	2	16	13	-	-
G3EDW	45	17	4	11	13	-	-
G3HBI	20	5	1	-	14	-	-
G3GZA	17	11	4	1	1	-	-
G3HCW	16	-	-	-	14	-	-
G3EKP	7	1	1	-	5	-	-

Like everybody else the two Watts have been on holiday this month! (Oh what a crack! I shall be getting an offer from the BBC if I go on like that!) Monty's new country on 3.5 was due to the HA4SA contact mentioned in Tx Activity

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F-R-E-E TO GROUP MEMBERS.

Three parcels of battery valves are waiting to be claimed. Each contains a number of triodes and one or two other types. The parcels will be sent to the first three members applying for them, provided they inclose postage, to P. White, 46 Purvis Rd., Rushden, Northants.

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If you like "Q R P" and enjoy your membership of the Group you would help us a great deal by renewing your subscription promptly when we notify you that it is due. Thanks, OMs.

Q R P C - Z PANEL

1951 SERIES	COUNTRIES				TOTAL	ZONES
	3.5	7	14	28		TOTAL
P. Huntsman	19	42	146	14	149	37
Mike Wassell	-	19	132	44	138	37
D.G. Gordon	19	15	78	31	88	30
H.G. Wells	14	16	85	9	89	28
E.W. Gardiner	9	10	61	29	82	26
A.E. Stonestreet	10	17	48	28	65	18
D. White	4	4	46	5	51	19
R. Murray	7	10	30	-	41	15
R. Nixon	-	-	34	-	34	14

I thought Peter wouldn't stand for playing second fiddle long! It looks as though there is a grand old tussle warming up for the top place and I quite expect that Mike will have a reply ready next month. H.G. Wells has found another four countries, too, but his zone score is not quite strong enough to gain him a "rise". Let's hope that, next month, with holidays over for most people, there will be a return to the old activity in this panel.

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ISSUE No 25

Our 25th issue (for which all gen should reach me not later than NOVEMBER 1st) will be on display at the RSGB Exhibition. I am very anxious to make it a really tip-top number, and I would like EVERY ONE OF YOU TO DO YOUR BEST TO SEND IN AN EXTRA LOT OF GEN.

THE KALEVELD CUP CONTEST - RULES.

This contest is open to members of the QRP Research Group only.

The duration of the contest will be from 0000 hrs, Sunday, 23rd Sept, to 1200 hrs, Saturday, 29th September, 1951.

The contest is in two sections, as follows:

SECTION "A": The Transmitting Contest.

(1) All transmitters used must conform to the power limits recognised by the Group, ie, FIVE WATTS MAX INPUT TO THE LAST VALVE AND NO PRECEEDING VALVE TO TAKE MORE. No restriction will be placed upon the receivers used by contestants in THIS section.

(2) The object, in this section, is to obtain the three best contacts of the week, calculated on the system adopted in our Trantest; thus --

(a) The following frequencies will be available for use and each will be given the multiplying factor shown:

1.7 Mc/s	x	5
3.5 Mc/s	x	3
7 Mc/s	x	2
14 Mc/s	x	1
28 Mc/s	x	1

(b) The distance, in miles, between the stations in any QSO will be multiplied by the above frequency factor and divided by the contestant's Tx power in watts. Thus, POINTS equal MILES x F.FACTOR ÷ WATTS.

(3) No points will be awarded for a QSO with any one station on more than one band.

(4) ALL calls, contacts and times of operating, whether used for scoring points or not, must be reported in order to pro-

vide a check for section "B" of the contest.

SECTION "B": The Listening Contest.

(1) All receivers used must conform to the power limits recognised by the Group, ie, 1.25 watts max HT consumption.

(2) The object in this section is to submit the most detailed report of Tx members contest calls and contacts.

(3) TWO POINTS will be awarded for every contest QSO recorded, and TEN POINTS will be allocated for the first call heard from each contesting Tx, ie, the first time "G1XYZ" is heard ten points will be gained and every time thereafter that he is heard in QSO with a different station another 2 points can be added. CQ calls by contestants will gain half the points laid down above provided either that a minimum of one hour has elapsed between such calls or that a QSO by the station has intervened.

(4) The time, frequency and call signs of both stations in QSO (or of the station calling CQ) must be recorded and will be checked against the logs supplied under Section "A", rule 3.

If there is any point in the above which is not clear, or if there appears to be need for greater detail, please let me know as soon as possible and I will endeavour to clarify the position in ample time before the contest.

For the benefit of Section "B" contestants a FULL list of our licensed members will appear in our next issue -- a FULL list, not a list of contestants only.

It would probably be of help to the Rx contestants if the transmitters taking part would call --- -- -- -- from time to time.

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