

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

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JOURNAL OF THE
Q R P
RESEARCH SOCIETY



.....
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PRESIDENT: Mr E. Banks, GC2CNC
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EDITORIAL

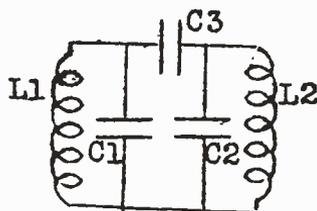
During Christmas our shack (which, for some strange reason, our non-radio friends will persist in calling 'sitting room'!) was so completely festooned with Christmas cards that there was hardly room for other decorations. It is utterly impossible for me to send a personal word of thanks to all the members who remembered us in this way, and I can only hope that, in reading this, they will each accept it as addressed to them in an equally personal manner. Although I can only address it to you collectively, believe me I am thinking of you individually as I write.

It is a long time since any New Year Editorial of mine has harped upon the great strides and advances which we have made in the passed months. I always prefer to look to the future. We HAVE done well, but that is done and we have to look forward to a greater improvement than ever. We are all set to make our fifth year the most outstanding of any. We have very big plans indeed and they cover a great variety of aspects of our hobby. We want your support to carry them through.

..... DESIGN OF QRP SUPER-HETS
by DAVID WHITE, G5JKA.

PART 5 - continued from Dec 1953.

If the detector circuit rearrangement, mentioned last month, is not desired it will be necessary to change the coupling in the last transformer. The coupling circuit shown here is capable of being used in the normal type of detector circuit.



All component values are the same with the exception of C3 which, for the detector transformer will be approximately 1 pF. With this type of coupling it is almost essential to put L1 and L2 in separate cans as the capacitive coupling between the coils must be by means of C3 only.

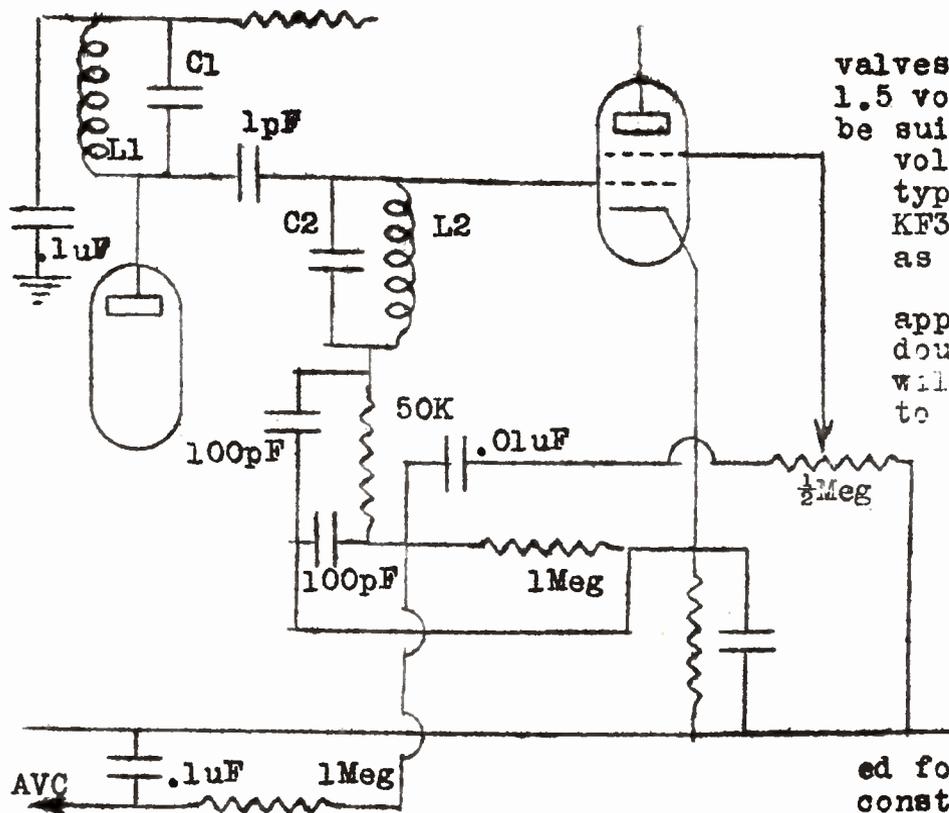
The recommended detector circuit is shown below.

If a 1 pF condenser is not available the coupling may be done by means of two insulated pieces of wire close together; the capacity between them is adjusted for optimum results, being increased until the signal reaches a maximum and then reduced slightly below that point.

The choice of suitable valves will be governed by the requirements of high gain and, as will have been seen from the foregoing paragraphs, as high an anode impedance (R_a) as possible.

If the application of AVC is considered desirable then the valve will probably have to be a variable μ type, although the effect can be simulated on some valves which are normally straight, such as the EF50. If a valve of this type is used the control will be very effective but precautions will be necessary if the mixer has a long grid base.

Suitable vari μ valves would be the EF39 or equivalents, or better still the EAF 42. A 6K7 should not be used as the gm, and therefore the gain, is down and also the R_a is rather low. If AVC is not required then much lower consumption valves such as the 6J7 may be used.



As far as battery valves are concerned, in the 1.5 volt range the 1T4 will be suitable, and in the 2 volt range recommended types are the VP23, the KF35 and the VP2B (used as a pentode).

With regard to the application of AVC it is doubtful whether there will be sufficient gain to render it useful on the amateur bands unless some device for providing extra gain, such as regeneration, is used. The useful AVC is, in any case, limited to phone working unless special provision is included for lengthening the time constant.

(Next month's instalment in this series will be "Coil Calculations")

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.....: SOCIETY NEWS & ACTIVITY :.....

G.M. Sutcliffe (Halifax) hasn't sent us much gen during the year, but just before Christmas we received a communication from him which leaves us in no doubt that he is still interested. (Thanks for the very kind thought, OM, which was duely appreciated).

Den Auton, G3IHI (Swindon) has been waging battle with the 80 metre adicts for some time and assures us that he has managed to influence some "types" to reduce to reasonable power while others have received his uncensored comments on their 150 watts plus! Den is now running a 6AC7, 6AC7, T111 rig, variable up to about 5 watts, and a 68 ft WØWO 34 ft high.

Peter and Ronnie Huntsman (Hexham-on-Tyne) combine to wish every member of the Society success, prosperity and gd Dx in the New Year. Peter says he has "stuck" at 145 countries for the C-Z panel. He spent the last days of '53 trying to do things for the "Top Band Panel" but G5RI, who's QTH is about 1½ miles away, spoilt Peter's chances there. In between the "blot-outs" however he did manage to add EI9J, WLLYV & VE1EA to the log and his ambition is now to collect a ZL on 160 with his O-V-2 just to "show" the super-het boys.

Sam Hall, G2AOL (Oxford, Kent) has heaved a sigh of relief at the passing of the old year and says he is going to sit back and let some one else battle for the GC2CNC cup in future while he concentrates on working up that elusive 200. Also he has been having keying trouble with the top band rig so an overhaul is indicated there.

Ian Glen (Coldingham, Berwickshire) will be in "pivie street" again by the time this is published and he has spent his last few leaves getting the shack in order. A new stabilised power pack is already complete and a sig-genny is well under way. The next item is a really fine mast so anyone with a fir tree had better watch out! (We shall look forward to seeing you in the C-Z and Top Band lists again this year, Ian).

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Ron Taylor, G3JAL (Thornton Heath) has his 70 cms gear in the final stages of completion and is planning a corner reflector antenna. He has joined the Kingston QRP Section Net on Top Band and, as these activities have kept him pretty busy, he has temporarily shelved the 2 metre development.

Norman Bason (Peel, I. of M.) is most anxious to know if anyone can put him in touch with any 953 or 958A battery acorns. He says the new TV booster station on the Island is a complete flop so far. The Island is only 30 x 12 miles but the station fails to give anything like full coverage despite increased watts which made no difference at all. It seems they are now looking for a more suitable site.

Bob Eldridge, VE7BS (Vancouver) is now active on 7 Mc/s with 15 watts input to a 1625 with 350 volts on the plate and a 66" folded dipole of 300 ohm twin lead with 300 ohm tubular twinlead as feeders. Best Dx so far has been KH6AFS. Bob's great ambition now is to achieve a QSO with Peter VQ2W -- yes, that certainly would be something, Bob!

Evert Kaloveld, PA0KE (Rotterdam) has been somewhat less active lately having been concentrating on constructing a Panadaptor, variable from 120 to 1 Kc/s, which shows up all stations working between those limits as pipes on the base line of a 3" c.r.t. After some difficulty in getting it working he finds it is a very useful addition to the shack equipment.

Brian Smith (Westgate-on-Sea) asks me to pass his very sincere thanks to three of our members who promptly answered the remarks which appeared in last month's issue. A couple of days after the publication of that issue a ten shilling note arrived at HQ from an onymous donor and not so long after that the fund was increased by 2/- from G.E. Keeble, and a further 2/- from David White, G3 JKA. So Brian's subs are now fully paid to May 1955. THANK YOU, OMs, FOR AN OUTSTANDINGLY GENEROUS GESTURE WHICH IS NONE THE LESS APPRECIATED WHEN I SAY THAT IT IS TYPICAL OF THE SPIRIT WHICH PERVADES THIS SOCIETY. (Incidentally, Brian, the 10/- came from a school master, so they're not such a bad

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mob after all -- no, not one that YOU know, Brian!)

Fred Bailey, G3HJL (Boreham Wood) is yet another of our many members who have commentated upon the great success of the QRP Society "Get-together" at the RSCB Exhibition. (We intend to get this year's event REALLY organised, Fred, and make it the first of an annual run of QRP-fests).

Cyril Deane (Catterick Camp) finds that he is in the same School of Signals troop in which David Mainhood (G3HEW) spent his two years -- and that makes yet another friendship launched through the auspices of the QRP Society!

For Turner, G3IMG (Brierly Hill, Staffs) is ironing out the "snags" that crop up with the acquisition of a new licence. He has, however, completed a four band transmitter, so we should be hearing something of him soon.

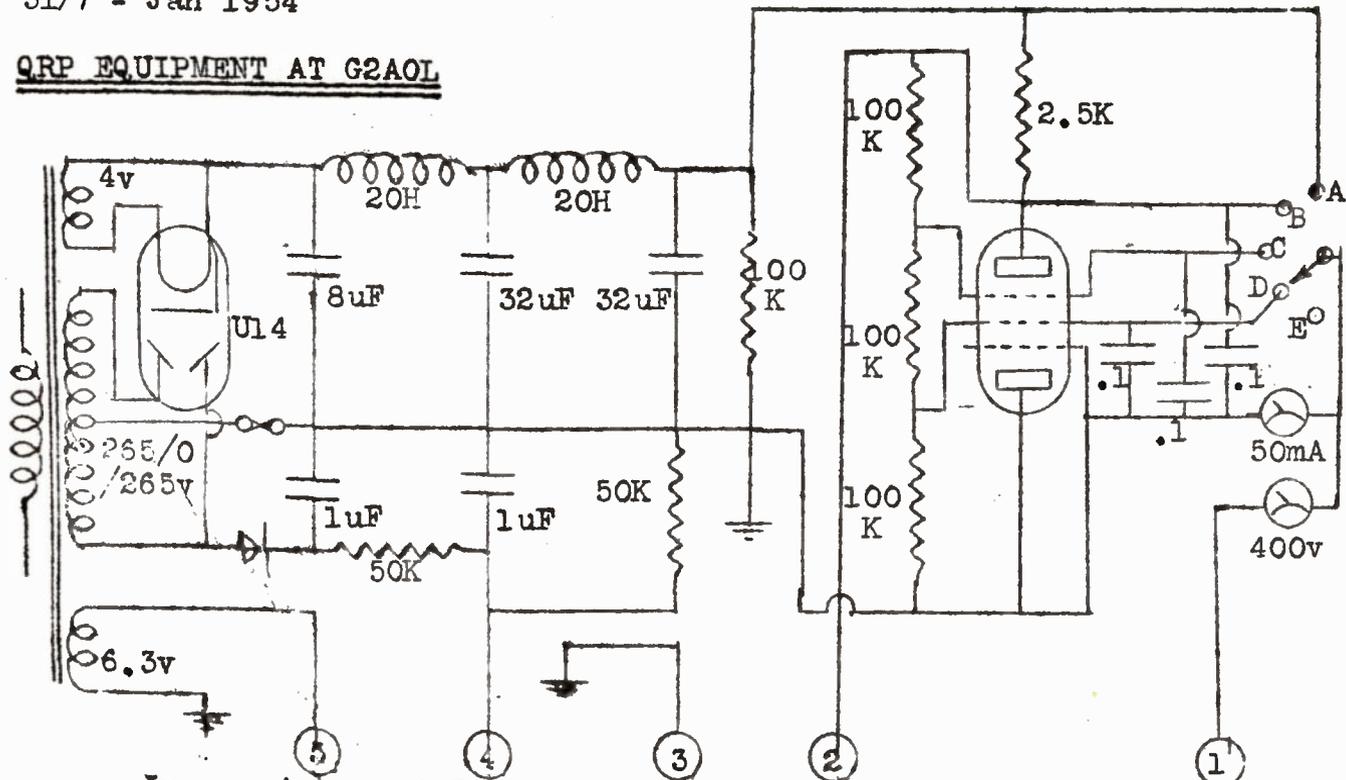
Jack Harris, G8BOF (Sutton, Surrey) who is known to his own net as the BOffin, had 2½ weeks holiday around Christmas time, during which he hoped to put the final touches to his "200" score for the year, but he found condx pretty grim, with 80 "deserted" and 40 "a dead loss".

"Monty" Banks, G020NC (Jersey) has achieved the first GC/W contact on Top Band with another QRP Society member, Howy S. Bradley, W2QHH at the other end. Both, incidentally, are also FCC members. The contact took place at 0720 on December 25th (yes, Christmas Day!) Monty's gear was 6J5 Clapp, 6J5 buffer, 6V5 PA, running 4.4 watts, half wave antenna and S640 Rx.

Howy Bradley, W2QHH (Hamilton, USA) was using an 807 PA for the above contact, running 25 watts, with a 135 ft long wire and a Collins 5A Rx. Howy, who is known as the "QRP W", needs only one more country on 160 to qualify for the Short Wave Mag 5-band award, and he is chasing GI and GM for this. He has a regular Friday sked at 0700 with Monty.

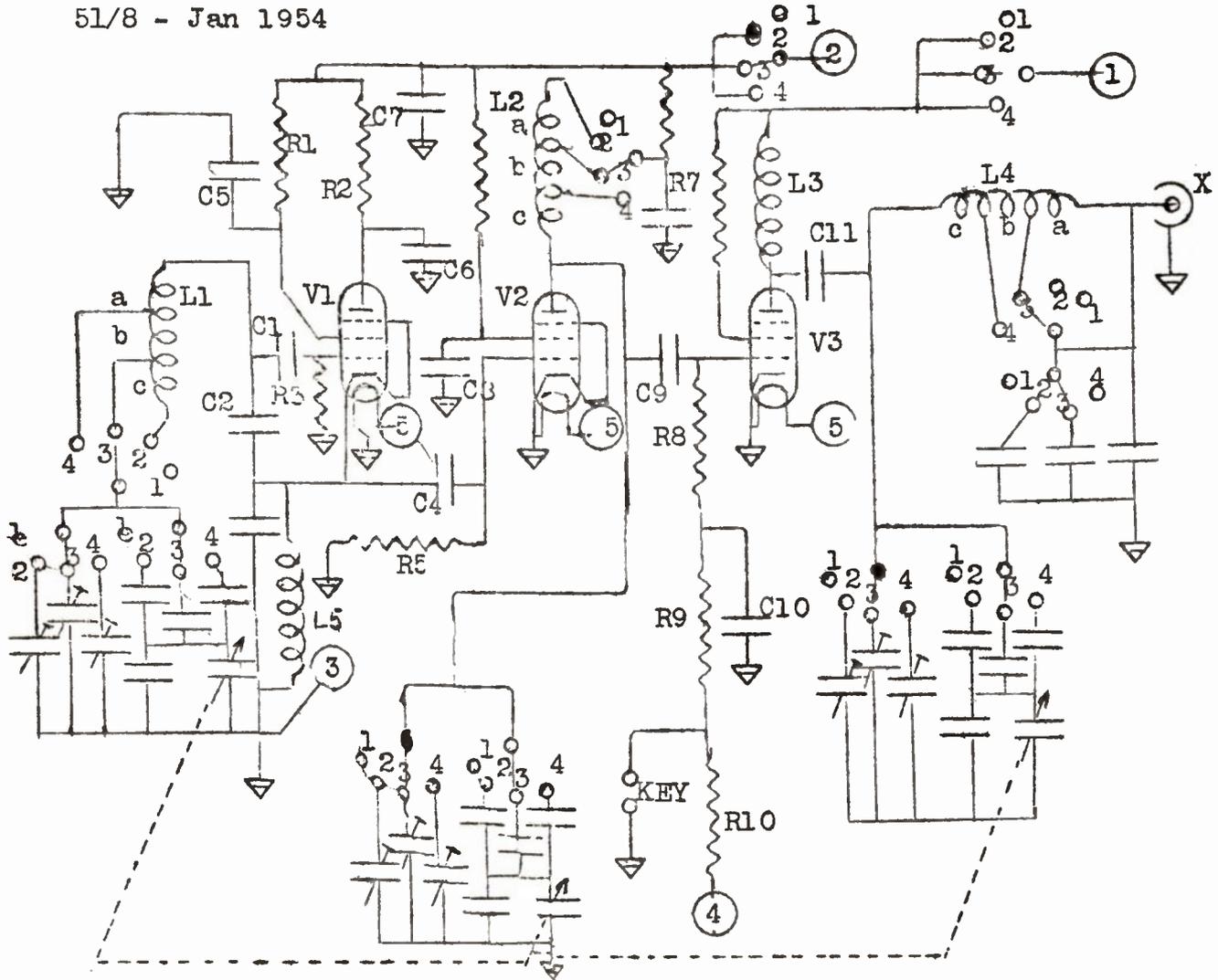
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QRP EQUIPMENT AT G2AOL



In our issue of January 1953 we published an account of the gear then in use at G2AOL. It is very appropriate, therefore, that our present number should carry an impression of the improvements which have been incorporated during the intervening twelve months. Sam Hall, the fist behind the G2AOL sig, assures me that his gear is now pretty well finalised. We shall see about that -- perhaps in our Jan 1955 issue! In the mean time, if anyone wants to copy the gear he may do so with complete assurance as it is fully tried and tested and will not prove a flop like one of our recently published circuits.

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Considering first the power supply unit, those of you who have the issue of Jan 1953 will notice that one or two important changes have been made. The diagram is fully explanatory except for the switching arrangement shown in the top right hand corner. In this contact A gives 280 volts, B 190 volts, C 130 volts, D 65 volts and E is OFF. The distribution points along the bottom of the diagram are as follows: 1 is PA HT pos, 2 VFO HT pos, 3 earth, 4 120 volts negative bias, and 5 is 6.3 volts AC to the heaters.

The diagram on page 8 (which your Editor sincerely hopes he has managed to transcribe without any errors!) shows the gang-tuned, band-switched transmitter for 1.7, 3.5 and 7 Mc/s. The actual coverage is as follows: with the twelve element switch in position 1 the Tx is OFF, in position 2 the coverage is 1.72 to 1.94 Mc/s, in position 3 (the position in which the switch is shown in the diagram) the coverage is 3.50 to 3.65 Mc/s, in position 4 the coverage is 7.00 to 7.10 Mc/s. The circled distribution points on this diagram agree with those on the power unit diagram.

Component values are : C1, 100 pF; C2, 500 pF; C3, 500 pF; C4, 50 pF; C5, .01 uF; C6, .01 uF; C7, 500 pF; C8, .01 uF; C9, 500 pF; C10, .01 uF; C11, 220 pF; R1, 50 K; R2, 10 K; R3, 50 K; R4, 50 K; R5, 50 K; R6, 1 K; R7, 15 K; R8, 33 K; R9, 33 K; R10, 1 Meg;

Coil data is: L1, section "a", 8 uH; section "b", 12 uH; section "c", 32 uH. L2, section "a", 24 uH; section "b", 12 uH; section "c", 12 uH. L3 is an RF choke. L4, section "a", 24 uH; section "b", 12 uH; section "c", 12 uH. L5 is an RF choke.

The output, X, is a 72 ohm line to the antenna tuner. The valves are, V1 and V2, both 6F91, and V3 a 6AQ5.

Proof of the efficiency of this transmitter is amply demonstrated in G2AOL's performance in our "200" contest during the passed year, and if anyone is sufficiently interested to require further information we shall be pleased to get Sam to enlarge upon his gear.

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.....: THE KINGSTON & DARS QRP SECTION :.....
Report from G3JNB

Activity in the construction field has been low owing to Christmas festivities and the ensuing "hangover", both monetary and otherwise. Stations 3JKA and 3JNB joined the huge Sutton and Cheam net, held on Top Band, on Christmas morning. Excellent reports were received by both stations, input powers being between two and three watts in both cases.

The main development in the last month has been the awakening of a keen interest in the 420 Mc/s band. Although, as every one knows, at this frequency the snags can be enormous, David White, G3JKA, Roger Taylor, G3JAL and your reporter, 3JNB, have already completed rigs and are now at the "head-scratching" stage (An early arrest is expected, Hi)

The regulations for the contest mentioned in the last issue are being finalised and already a preliminary Council of War has been held by the 3JNB team.

We should very much like to have some new stations on the Kingston QRP net. The regulars are air-borne for about an hour and a half every Sunday afternoon (full details as per last month's "QRP"), so do if possible check in for an exchange of reports if nothing else. If you cannot hear us please mention the fact in your next letter to QRP Society HQ, whos Sec will QSP by land-line. All listener reports on the net, sent to G3JNB, will be QSL'd.

Finally, to all members of the QRP Society the QRP Section of the Kingston & DARS sends it's "73 fer 1954".

Reports from other clubs with QRP interests are always welcomed by the QRP Society and will be published in "Q R P". Affiliation with the Society can be arranged by application to the Hon Sec who will submit the application to the Society's Council.

 145 Mc/s RECEPTION CONTEST

On the first of April this year a new contest will be launched the object of which is to encourage interest in VHF. The contest was designed by the Contests Committee of 1953, but it has been held over until the Spring because all our existing contests close at the end of each year leaving the first months of each year with, perhaps, a minimum of interest. Ending on March 31st, this new effort will spread interest over any such slump period.

It is a simple contest but it could provide, not only an exciting tussle, but much useful information as well, so we earnestly trust that our increasing army of VHF enthusiasts will enter in force.

Briefly the rules will be as follows:

- (1) The period of the contest will be from April 1st each year to March 31st of the following year.
- (2) The Two Metres Amateur Band only will be used.
- (3) The receivers used may be battery or mains but **MUST BE HOME MADE** and must conform to QRP standards ($1\frac{1}{2}$ watts maximum HT). They may be TRF or Super-het.
- (4) Converters are **NOT PERMITTED**.
- (5) Stations heard are to be logged once only.
- (6) Entries to be sent in to "Q R P" each month
- (7) Scoring to be -- Total mileage of all stations heard multiplied by the total number of stations. The result to be divided by 100.

Reports to be made out as follows:--

Heard	GIWIZ,	miles	20	Total distance (miles)	91
"	G4GIFL,	"	29	" stations	<u>3</u>
"	G7FOO,	"	42	Score to date	<u>273</u>
	Points claimed for the month		273/100 equals	<u><u>2.73</u></u>	

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.....: NEW -- T. R. F. SECTION :.....

Here is another innovation for the New Year -- a section of the Society devoted exclusively to the interests of our many members who (like your editor for one) retain, despite all the sweeping advances of super-hot design, a real devotion to the TRF type receiver.

We have a shrewd suspicion at HQ that this will prove to be the strongest and best supported section of the Society, and we foresee, at some future date, a most hectic contest taking place between TRF and S-H types. (That could be fun! And, Oh Boy, what a lark if the TRFs pulled it off!)

Will all those interested in TRF activity PLEASE WRITE IN TO H.Q. AS SOON AS POSSIBLE so that, by next issue, we can have the prospects fully weighed up. We want to know, briefly, is the gear used (ie, 0-V-0, 1-V-1 or -- 2-V-3?), the frequencies covered and the extent of activity.

If the response is as extensive as we hope a page or two of the mag will be devoted to this section whenever space permits -- and we are looking forward to being forced to MAKE space!

.....: THE QRP "200" CONTEST :.....

Well, talk about a climax! First we received G2AOL's entry and we thought to ourselves "Oh well, Old Sam's got it with another eight points on his score." And then, along comes Jack Harris with a whole 36 increase to take the lead for the year by one point! That's a really fine finish on both their parts and, what's more, they each want less than thirty for the ultimate "200". And Fred 3HJL made a valiant effort at the last as well and is in sight of half distance on his all time score. To add the final touch, Jack 2BOF, has already sent in his first entry for 1954 with 15 counties on Top Band and three on 3.5 -- but we shall save that up for next month.

The final "200" Contest scores for 1954 are:

<u>ALL TIME RECORD:</u>	<u>COUNTIES WORKED (Mc/s):--</u>			<u>TOTAL</u>
	<u>1.8</u>	<u>3.5</u>	<u>7</u>	
1: G2BOF	67	62	44	173
2: G2AOL	70	63	38	171
3: G3HJL	8	52	-	60
 <u>1953 ONLY RECORD:</u>				
1: G2BOF	66	61	39	166
2: G2AOL	68	59	38	165
3: G3HJL	8	27	-	35

..... THE 1953 QRP C-Z PANEL

For the first time this year only one report arrived this month for the C-Z Panel -- from Norman Bason of Peel, Isle of Man, and, although it increases his score on 7 M/xs to 40 it does not alter his totals.

The placings, therefore, remain as last month:-- Peter Huntsman, 180; E.W.Gardiner, 151; Norman Bason, 147; Ted Stonestreet, 140; B.J.Read, 126; D.Gordon, 109; and R.Whitfield, 108.

So Peter earns himself a certificate (which will be despatched in due course) for another outstanding effort.

As soon as possible we propose to issue a sheet of standard Country prefixes for use with this and similar contests in order to overcome the complaint which has reached us from more than one source that the continual changes in "official" prefix lists cause some difficulty in certifying claims.

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.....: TOP BAND SWL PANEL :.....

Here also only one report has arrived, also from Norman, but this time it is for a reduction in total instead of an increase (owing to an unfortunate misprint on our part last month). The placings, however, remain in the same order, as follows:--

	COUNTRIES	COUNTIES	TOTAL
W.B.BAKER (Berwick-on-Tweed)	8 (7)	60 (39)	68 (46)
P.HUNTSMAN (Hexham-on-Tyne)	11 (11)	51 (51)	62 (62)
N.BASON (Peel, Isle of Man)	8 (8)	51 (51)	59 (59)
D.G.GOPDON (Bournemouth)	5 (5)	46 (40)	51 (45)
H.G.WELLS (Waltham Cross)	7 (-)	39 (-)	46 (-)
E.GARDNER (Diss, Norfolk)	4 (4)	35 (24)	39 (28)

The cumulative figures here (those shown in brackets are for 1953 only) will be carried forward through the coming year as before, but it is anticipated that this contest will decline considerably in future owing to the number of it's "regulars" who have migrated to VHF and who will, we hope, appear as regular entrants in the new VHF contest

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V H F SECTION

There has been a steady increase of interest in VHF during 1953 and it is felt that a revival of the VHF section which was started by our President, "Henry" Banks, G3BNC, might now receive the support which it deserves. BNC worked very hard indeed to make a success of

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this Section and we, at HQ, were extremely disappointed at having to admit, after some six months, that lack of support apparently proved that it had been floated before it's time. We do feel, however, that it laid the foundation to much quiet thought and not a little tentative development work and probably helped quite a lot to bring about the present rapidly increasing interest in VHF.

Ted Stonestreet, who has been continuously VHF-minded ever since he joined us as "one of the few" back in 1949, has offered to organise the Section, and I do most sincerely hope that ALL members with any inclination towards VHF will contact him. Don't write to HQ and say you are interested, and then leave it at that (as so many of you did when 2CNC held the reins). WRITE DIRECT TO:--
TED STONESTREET, 29 CHAPLIN ROAD, WILLESDEEN GREEN, LONDON, NW2.

Give him the encouragement of letting HIM know that you are interested.

URGENT -- Can anyone put us in touch with a source of supply of 957 and 958 valves, please. We have several enquiries for these bottles

.....: MESSAGE FROM THE NEW PRESIDENT :.....

LITTLE DID I ANTICIPATE, WHEN I JOINED THE QRP SOCIETY IN 1950, THE VERY GREAT HONOUR WHICH HAS BEEN BESTOWED UPON ME IN ASKING ME TO BE IT'S PRESIDENT IN 1954.

IT IS MY PRIVILEGE TO FOLLOW A GREAT MAN IN THE 'HAM' WORLD, AND IN ALL SINCERITY I CAN SAY THAT THERE ARE VERY FEW MEN WHOM I SHOULD BE SO HONOURED TO FOLLOW.

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I PAY TRIBUTE, ALSO, TO CAPT A.M.HOUSTON-FERGUS, G2ZC, WHO, AS A ONE-TIME RESIDENT OF JERSEY, WAS IN FACT RESPONSIBLE FOR THE COMING INTO BEING OF GC2CNC, OR "2CNC" AS I WAS KNOWN BEFORE THE WAR.

I AM VERY SORRY TO HEAR OF THE DECLINE IN MEMBERSHIP WHICH HAS TAKEN PLACE OVER THE PASSED FEW MONTHS AND I DO EARNESTLY ASK YOU ALL TO SUPPORT, THROUGH THE MEDIUM OF YOUR SOCIETY, A CAUSE WHICH HAS WORLD-WIDE NOTICE AND WHICH IS OF EVER INCREASING IMPORTANCE FOR MANY REASONS, NOT THE LEAST OF WHICH IS THE PRESENT OVER CROWDED STATE OF THE 'HAM' BANDS. IT IS PERHAPS NOT REALISED BY THE UPRISING GENERATION OF G3PLUS THAT IN THE EARLY DAYS FAR MORE PLEASURE WAS DERIVED FROM OUR HOBBY THAN APPEARS TO BE THE CASE TODAY. PERHAPS WE WERE 'HOME-BUILT MINDED' THEN, WHEREAS NOW WE CAN BLAST OUR WAY THROUGH THE ETHER WITH 150 WATTS PLUS SO THAT OUR DEEP-ROOTED AND REAL ENTHUSIASM FAILS. YET QRP OFFERS US THAT SAME BASIC INTEREST, BECAUSE WITH QRP WE HAVE TO DO THINGS FOR OURSELVES AND NOT DEPEND ENTIRELY UPON OTHERS -- AND WE CAN ALL JOIN IN BECAUSE IT IS CHEAPER THAN QRO

I ASK YOU ALL TO CONSIDER QRP IN THE LIGHT OF YOUR INTEREST AND ENTHUSIASM. DO YOU NOT OBTAIN GREATER SATISFACTION FROM A QSO OR RECEPTION ON QRP AS AGAINST THE SAME HAPPENING ON QRO?

I SHALL BE ASKING THE EDITOR TO PONDER OVER A FRIENDLY COMPETITION (no prizes) TO PROVIDE TABLES OCCASIONALLY OF THE PERCENTAGE OF MEMBERSHIP PER COUNTY TO THE TOTAL POPULATION OF THE QRP SOCIETY. LET US HOPE THAT IT WILL ENCOURAGE A FRIENDLY RIVALRY.

A HAPPY NEW YEAR TO YOU ALL, AND REMEMBER --

"VIVA Q R P".

NEXT MONTH we hope to publish details of the new 70 cms Rx at G3JKA and the most novel rotary dipole which he is using. It is also probable that we shall be able to give you a seperate sheet which may be pinned up in the shack of all call-signs now active in the Society.

In the mean time, let's hear from you about the new TRF Section.