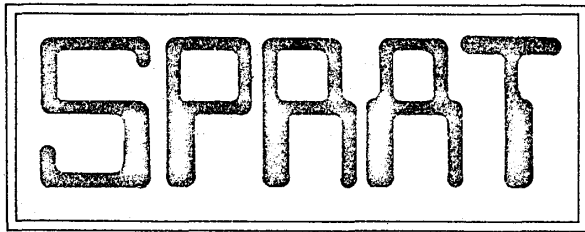
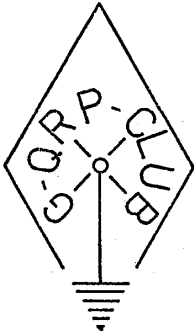


G.C.Dobbs, 61 Park Street, Cleethorpes, South Humberside DN35. 7NG.

Devoted to Low Power Radio Communication



NUMBER TWO.

SPRING 1975.

Improving the Efficiency of Short L.F. Band Aerials.

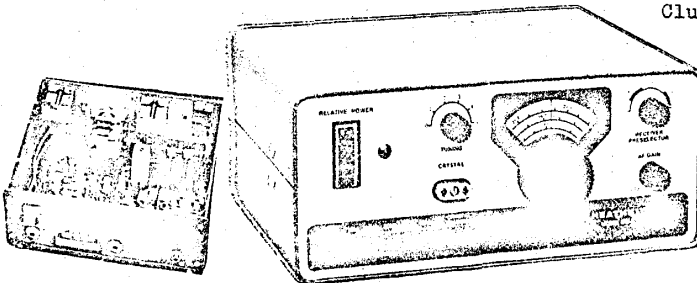
Aerial Tuning Units for Q.R.P.

International Q.R.P. News.

Simple R.F. Meter.

Data Sheet Offers.

Club News etc. etc.



HEATH HW-7.
Modification Ideas.

CHAIRMAN.

Dr.Gordon Bennett.(G3DNF)
 52 Whinmoor Crescent,
 LEEDS. LS14 1EW.

CONTEST and TEST MANAGER.

Mr.Angus Duncan Taylor.(G8FG/GW8FG)
 37 Fickerill Road, Greasby,
 WIRRAL. Mersyside. L49 3ND.

EDITORIAL NOTES:

Officers: It will be evident from the heading of this page that the club now has a small team of officers. With the growth of the club, it was apparent that some of the work load could be shared, so I took it upon myself to invite Gordon and Gus to take up the above appointments. Gordon is well known in UK Q.R.P. circles in both technical and operating contexts - he was the winner of the last DL QRP contest. Gus Taylor is the U.K. organiser of the DL AGCW QRP CONTESTS and has been active in QRP work for many years. Both will, I am sure, be assets to the future growth and development of the club, and agree that as the club becomes more stable these offices should be on an elected basis.

MEMBERSHIP: At the time of writing this the paid-up membership is over 60, including 5 members in the States. SFRAT is also sent to the main amateur radio magazines, K8EEG of the MILLIWATT, PAOGG - European rep. of the U.S. based QRP Club and to any other interested groups or sources of publicity. The most immediate need of the club is to grow in size and stability. This can only be achieved by providing a worthwhile organisation and publicity. Both require the help of all members - I welcome any ideas from members about the function of the club, and hope that all members will spread the news about, through personal contact, local clubs and QSOs.

S.P.R.A.T. I hope you enjoy this edition of SFRAT. I would like comments on the format - do you like the 3-fold A4 size? - the reverse printed pages? - the content? At the moment SFRAT is being produced at an unrealistically low cost. This is thanks to the kindness of a local office who allow me free use of facilities, provided that I buy the paper, to produce the journal. I am making full use of this kindness so that the club funds can remain at a high level. It is probable that I will move QTH during this year, and the cost of producing SFRAT may increase unless I can find similar facilities in the new area. If any members have access to the use of a photocopier, or, more importantly, an ink duplicator will they please let me know. USE of the equipment is all that is required, the club will provide paper, stencils etc.

IN THE NEXT S.P.R.A.T.....

G3IGU 80m. QRP Transceiver - A Simple Frequency Spotter - Report on the Ten-Tec Argonaut - News etc.... AND WHAT ABOUT THAT ITEM FROM YOU ?

Q.R.P. CONTESTS by DL AGCW.

See the paper by Gordon & Gus enclosed with this issue.

Further details from G8FG, who will also receive logs from contestants in the Summer '75 contest & will work out your individual score. PREPARE NOW FOR THE SUMMER CONTEST.

QRP - Summer - Winter - CONTESTS

Organized by Activity-Group-CW in DL.

Single-op CW. Below 10 watts input, but open also to QRO-stations.
 04/07-Jul-74, 1800-1900 GMT, 3.5-7.14-21-28 MHz.
 11/12-Jan-75, 1800-1900 GMT, 3.5-7.14-21-4-1.8 or 28 MHz.
 05/04-Jul-75, 1800-1900 GMT, Select 5 bands from 1.8 to 28 MHz.
 15 hours operation allowed, take 6 hours pause in two parts at most.
 Call „cq QRP test“. Exchange RST and QSO-number/input (./1 to ./9). Add „x“ if TX is CO- or VFO-controlled. Example: 579 005/8x.
 QSO's with all stns are valid: Own ctry = 1, own cont. = 2, DX = 3 pts.
 3 additional points for a QSO with another QRP-stn. (= 4-6 pts.)
 Handicaps: One stn using below 3 watts input or xtal-TX = 1 hep. in QSO. 4 heps possible (both ./ 2x or so). Both stns QSO-pts x 2 for 1 hep, both pts x 3 for 2 heps, both pts x 4 for 3 heps in a QSO ...
 Multipliers: own cont. = 1, DX = 2 pts per band and country, acc. to latest DXCC-list, but colonies in JA, PY, VE, VK, W, ZS extra.
 QRO-stns: Some rules, but input not limited (use ...QRO) and only QSO with QRP-stns valid. QSO-stns are much ... the QRP-stns are ...

CLUB NEWS....CLUB NEWS....

Many members have written to me during the last couple of months, far to many to include here but to summarise:

MEMBERS LIST.

I hope soon to issue a full list of members which will include their names, QTH and their special interests. This will enable "like-minded" members to correspond on matters of mutual interest. I have all members on file, but in some cases I do not have much on their individual QRP activities and interests. If you have not given me this information, or wish to add to it, please write as soon as possible so that I may complete the list for distribution.

CLUB NET.

A reasonable club "QSO Party" has been going on on Sundays at 1400 GMT on 3550. I have listened in, but as yet I have not erected an 80m. aerial - I have space problems! Although the present members of this group may wish to continue on 3550, I believe, with Gus G8PC, that we should encourage activity on the international QRP frequencies. These are listed in the International News section. Therefore, I suggest that we try 3540MHz for the Sunday gettogether. The 3550 frequency was suggested because of the crystals from J. Birkett, but these stocks soon ran out, and many members are VFO controlled. I am seeking sources of crystals for 3540, any help on this is very welcome. I am open to ideas on other skeds etc.

CM3MXN, Tom at 7 High Pleasance, Larkhill, Lanarkshire. is looking for QSO skeds on 80 and also on 4 metres. If interested write to Tom.

G4AYS, Albert in Burton on Trent (Moirs to be exact) is still working 'em on Top Band with his Xtal controlled 600m/w on 1844.79 & 3529 including OK & HB.

QSO OF THE SEASON should perhaps go to David Earl-Clark G5BIU, still in the Scillies having come from the States. David had a three way on 20m using 2 watts with WLBMS & ZELJY getting 339 from the States and Rhodesia, his 38th country with the 2 watts.

G3VFA/G3CED, George Partridge of "Joystick" fame has sent me a very impressive log of contacts, all with 5 watts using the Joystick, with good European results on 80 40 and 20.

G4DQF, Keith Simpson of Stockport, has written to enquire if any members have been attempting homebrew SSB QRP rigs. Keith wonders how the old phasing method would lend itself to QRP work, since it is simple and sideband suppression is not so critical with QRP. Any ideas?

GRAPHIC WORK.

While I am mentioning Keith, may I draw your attention to his first class graphic work. The front page of this SPRAT is his work, and the club symbol is Keiths design. As an engineering draughtsman, Keith has offered his services to the club.

C.W. AND MENTAL READING.

I have a confession to make (a change for a priest!) my CW is not all it might be. After a long period of being QRT, I returned to the bands and have since that time mainly worked the H.F. bands with the usual "rubber stamp" QSO's. The net result is that my morse is still rusty, and I reckon perhaps other club members may share my other difficulty of being a "scribbler". ie. I write all the QSO down to follow it, when I ought to be reading "mentally". G3ANQ, "Ted" Edington Sutton has been writing to me about CW and mental reading and has given the subject a lot of thought as a result of over 30 years of teaching people to read CW amateur and professional. Ted is to write an article on CW reading in the next SPRAT, but would welcome hearing from any member who has yet to take the morse test or wishes to improve his CW reading skill write to him at 3 Parkwood Rd, Woodside, Wimbledon. SW19.

80m TRANSCIVER CIRCUIT.

G3IGU, Keith Coates of Nr. Doncaster, has sent me an interesting circuit of his 80 rig. It has given Keith some worthwhile QSO's and the full circuit and details will appear in the next SPRAT.

OUR THANKS

go to G3KFE for his kind mentions of the club in the Short Wave Magazine CDXN column. David is now a member of the club

SPRAT SUPPLEMENT

Thanks to Gordon and Gus, this issue of SPRAT has a (COLOUR ? hi) SUPPLEMENT which is a paper written by the two most successful U.K. operators in in the DL QRP Contests. I hope we all learn a lot from it and the club members will prepare for the summer contest.

WHAT ABOUT THAT SPRAT ARTICLE FROM YOU? *George*

INTERNATIONAL Q.R.P. NEWS.

During the last two month I have had quite a lot of contact with qrp activity outside the U.K. I was contacted by PAoGG, the European Rep. for QRP ARC (the Stateside under 100watts club). He is keen to help the club in any way he can, and began by sending details of the club to be broadcast on the Dutch National Amateur Radio Transmitter PAoAA. He also sent me details of the following :-
EUROPEAN Q.R.P. PARTY. Every Sunday Morning - 10.00GMT on 3540 \pm 5KHz - 7030 \pm 5KHz at 10.30GMT & for D.X. 14065 \pm 5KHz at 11.00GMT, we are all invited !

K7ZVA, Robert L Jenks secretary of QRP ARCI has also written to wish us well and enclosed details of the awards for QRP work presented by that club. These include the "1000 mile per watt" award, DXCC-QRP, WAC-QRP etc. Any member requiring further details please send me a stamp for a copy of the QRP ARCI Awards Programme. The awards are open to all.

K8EEG, Ade Weiss. Editor of THE MILLIWATT has written to encourage us on our way. THE MILLIWATT is devoted to under 5watt Amateur Radio and can be mailed direct from the States (Sub. £1.85 to UK agents Waters & Station who advertise in S.W.M.) Ade was kind enough to give the club a good mention in the December MILLIWATT. This yielded some enquiries from the States and one from DL7DO. Ade and I plan to exchange news.

FROM THE STATES. I have had several enquires from the States, which have yielded 4 members so far, with the promise of more to come. The very useful development here is that W1EXZ, Bob Curtis, has offered to become a U.S. rep for membership of the club. Any Stateside QRP fans can write to him for details of the club, and he will have information to send them - less daunting than having to write to me in England. A U.S. subs rate of about \$3.00 has been suggested. Other U.S. members are W2BYO, Rev. Ray Stevens of Wellsville, N.Y. who runs an Argonaut, Ed Noll W3FQT the well-known technical writer in amateur circles, who is to be sent SPRAT and WB0WM, Skip Westrich our first Stateside member, who has send me a list of all U.S. companies who deal in QRP gear. I have written to them on behalf of the club and hope to announce anything of interest which come from this in the next SPRAT.

INTERNATIONAL Q.R.P. FREQUENCIES The following frquencies have been adopted by the QRP ARC who hope to establish them as internationally recognised frequencies for QRP work. 3540MHz - 7040 (in Europe 7030MHz) - 14065 - 21040 - 28040 - all \pm 5KHz. Suggested frequencies for Phone (SSB) are 3640 - 7140 - 14260 - 21300 & 28600. I hope that members agree that we should as a club, help to support the use of these frequencies for QRP work. Perhaps we should change our 80m net to 3540 - more of this in the club news section. We can help ourselves by keeping the amateur radio journals informed of these recommended frequencies in the hope that "gentleman's rights" may allow QRP work to go on without too much QRO QRM. Once these frequencies become well known for QRP work, we may find QRP to QRP contacts as easy as the QRP to QRO QSO's which form the bulk of much of our operating.

"DATA SHEETS".

Last month I offered the WICER article on photostat for anyone who sent me a stamp. I hope that we can increase the scope of offering DATA SHEETS to members as an additional club service. I can now offer the following sheets :-
HW-~~R~~ MODIFICATIONS The 2 QST articles are still available, one by WICER and the other by KH6HKZ. These are now supplemented, thanks to the work of Edgar G2FWA by
PRINTED CIRCUIT DETAILS OF HW-7 MOD's I can supply a sheet with the PCB layout of the WICER article, including the audio filter circuit. Edgar has also made two transparencies of the PCB (positive or negative) for members who can produce photographic PCB's. The transparencies are for loan only.
MFJ C.W. FILTER. I can supply the full circuit and fitting information
THE SM3CFV, 10watt, 80/40m TTX. The circuit of this interesting VFO controlled rig was passed onto me by John White G4BCY, from a Swedish magazine. The text is in Swedish, but John has obtained an English translation by SM0FXA. I am in the process of preparing a set of sheets to give the original article and the translation.

If you would like any of these sheets please send me a stamp, clearly stating which DATA SHEET/S you require. Any items too long for SPRAT can become DATA SHEETS.

So, what does all this do for you? When I first started applying these ideas in the early 60's I used to think 449 from an OK on top band was DX. Within a couple of years I had worked 150 different OK's, plus just about everything in Europe, with W1 and 5A3 thrown in for a bonus. All this with a 60ft back garden and a mast height of about 27ft. Some of my best results were using the system 'backwards' - bringing the fed end of the aerial down the mast to a remote ATU in a weatherproof box, and feeding the rf down the garden to it through a long length of co-ax (which of course was tied to the earth system). At the house the free end of the aerial was brought in under the eaves and the U sections wrapped round nails driven into the roof beams. Laugh if you like but it raised W1BB and a lot of other nice stuff.

So C.U. QRP 160

(dedicated to G5BIU by G8PG)

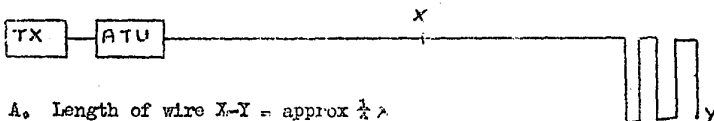


FIG.1.

A. Length of wire X-Y = approx $\frac{1}{4} \lambda$

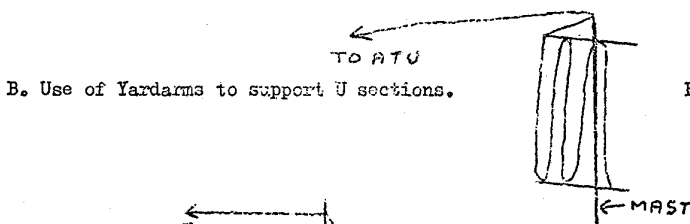


FIG.2.

B. Use of Yardarms to support U sections.

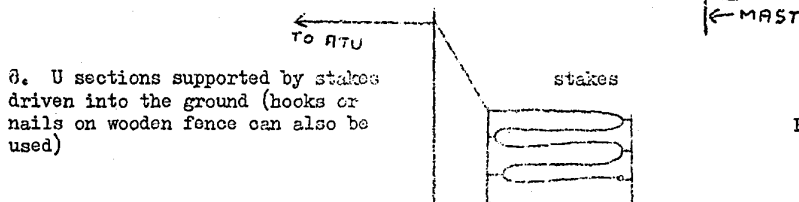


FIG.3.

C. U sections supported by stakes driven into the ground (hooks or nails on wooden fence can also be used)

D. U sections in loft (nailed to roof beams) Antenna fed at remote end.

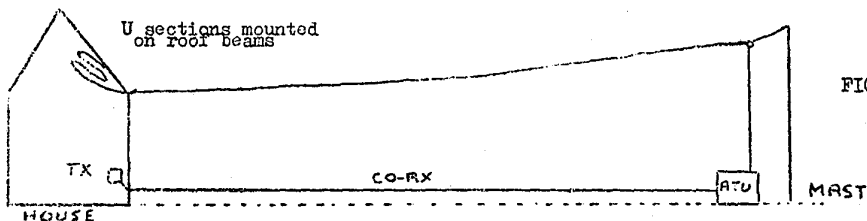


FIG.4.

IMPROVING THE EFFICIENCY OF SHORT L.F. BAND AERIALS. By Angus Taylor G8PG.

In a recent letter G5BIU asked for my ideas on how to put out a good 160m. signal from a small garden. Having spent a lot of time investigating this problem, my ideas may be of interest to other readers of SPRAT.

Firstly, a little theory. Power fed into an aerial is dissipated in two ways. The effective radiated power is dissipated in what is known as the radiation resistance (RR) and the wasted power is dissipated in the loss resistance (RL). Radiation resistance is a function of the height and length of the aerial, becoming less as either of these is decreased. The loss resistance is the sum of the ohmic resistance of the aerial wire, any insulator resistance, and the resistance of the earth connection. If reasonable insulators are used and fairly thick copper wire these factors can be ignored and only the resistance of the earth connection need be considered. The effective radiated power can be calculated from I^2RR , and the wasted power from I^2RL , but as the current is the same in each instance, we can derive these figures from the rf output of the transmitter and the ratio between RR & RL. Taking a typical example of a 66ft end-fed wire at 20ft, the radiation resistance at 160m. is 1 ohm. If a poor connection to a water pipe is used as an earth, an earth resistance of 99 ohms would be quite normal. If a 50% efficient, 10 watt d.c. input transmitter is connected to such an aerial/earth system, one % of the power will be radiated, and 99 % will be wasted. This means the effective radiated power is 50mW. The fact that many transmitters do get out with such inefficient systems is a tribute both to the effectiveness of QRP and the efficiency of modern receivers! For basic efficiency as low as this, big dividends can be reaped from improvements. For instance if we improve the efficiency so that RR is multiplied by 4 we would, taking the previous example, end up with a radiation resistance of 4 ohms and an earth resistance of (say) 24 ohms. This means that 1/7 of the power would be radiated and 6/7th wasted. Assuming the same transmitter, we would now be radiating over 700mW, an improvement of over 12dB. Assuming 5 dB per S-point this represents 2½ S-points at a remote receiver.

Let us consider how to get a fourfold or better increase in radiation resistance. One method would be to put a loading coil at the air end of the aerial and a fan of wires above it to provide a capacity hat. Disadvantages of this method are extremely careful design of the coil, the difficulty of weatherproofing it, narrow bandwidth, wind resistance problems and the fact that it is unsightly. The best answer I have found (for which full credit must go to G2MQ) is a non-inductive wire loading. This method requires noncritical adjustments, it will raise the RR of a 60 foot span by at least a factor of 4, and it is broadband. Figure 1 illustrates the method. An additional length of wire is attached to the aerial, sufficiently long to make the length from the centre of the existing span to the free end a quarter wave-length at 160m. (or 80m. if you wish to try the idea on that band). For 160 I would suggest an additional 90ft, assuming the original length was 60ft. The surplus wire is then wound in a series of very narrow U bends, as shown in the figure. The spacing between each side of the U sections need only be 2 to 3 inches. This configuration makes the wire non-inductive, so it does not radiate, but it loads the aerial very effectively. Apart from the increase in radiation resistance, the current maximum point is brought to the centre of the straight portion of the aerial. This means that the maximum radiation occurs from the straight portion and, as a further bonus, the current flowing through the earth connection is reduced.

The next job is to reduce the earth resistance as much as possible. Here the answer is to connect together everything in sight that can conduct current back to the base of the aerial where it is fed from the transmitter. Get a really good connection to the copper or metal water pipe. Lay a couple of thick wires under the aerial on the ground and connect them to the earth system. Drive a couple of 4ft copper rods into a damp part of the garden (at least 8ft apart) and connect them to the earth system. Dig radial wires into the edge of the flower beds and connect them up as well. If you have any fairly new galvanised wire fences, treat them as radials and connect them up. Finally if you have central heating, connect to one of the heating pipes. But DO NOT USE GAS PIPES - they can be dangerous.

prevents the spurious outputs that occurred with the original."

FINAL NOTE - G3RJV.

Even if you don't wish to "go the whole hog" with the W1CER mods in the QST article, I can recommend the muting and side tone mod as being an aid to the ears, if nothing else. Some copies of this article still available for an S.A.E.

THE G2NJ TROPHY. and awards.

Nick has bought the cup, it sounds very fine, and at the moment the final terms of reference for the award are being worked out - more news next SPRAT, in the meantime keep your QRP work going and you may qualify for the cup.

After reading how the presentation of awards has helped to build up interest inside and outside the QRP ARCI, I wondered about awards for our own club, both for members and outsiders. I am discussing this matter with Gus - G8PG - Contest and Test Manager and again more in the next SPRAT. We have two ideas at the moment, one for a "Worked Members" type of award, which may increase members operation and the keenness of QRO ops to seek us out - the other a countries number/power award with stickers for various combinations. Any ideas?

MATERIAL FROM MEMBERS:

SPRAT ; I always welcome letters from members about their QRP work for the news section (a little short this issue due to space) and I feel sure that many members are "sitting" on many little or BIG circuits which would be of interest and value to us all - and what about those odd tips and hints you assume everyone knows, but then find out they dont? Write them down - rough notes will do, sketch a rough circuit or diagram so that we can all share them and SPRAT can be a worth-while publication.....

DATA SHEETS : This is a service, mentioned elsewhere in this issue which I hope will expand for members - Large articles, or specialised interest articles or extracts for overseas publications could all make useful sheets for sending to members on request. Keep your eyes open, or jot down that circuit you have built. You have seen from our new FRONT COVER and his article, that we have an excellent draughtsman "on our side", and he has kindly offered to produce material for DATA SHEETS if graphic work is needed.

WHY NOT

offer to give a talk on QRP to your local club? By now you ought to have plenty of material from the various journals, the two SPRATS, and your own experience, to give a good talk on the subject, and if your local club is typical, they will be on the lookout for people to "fill meetings" (in both senses!)

SHORT WAVE MAGAZINE:

May I, on behalf of the club, thank the Editor of the Short Wave Magazine for his helpful and well-balanced editorial in the MARCH 1975 issue (I received it today) Let us hope that these words will be read by many and the opinions expressed will spread in the amateur radio world. (G3RJV)

Talking of magazines, the next SPRAT, I hope will be in June (I hope, I hope

George G3RJV.

SIMPLE HW-7 MODIFICATIONS.

Many of the HW7 owners within the club have already obtained copies of the two QST articles, but if you find such radical modifications rather daunting, here are a few simple, but useful modifications to improve the Heath HW7. (G3RJV)

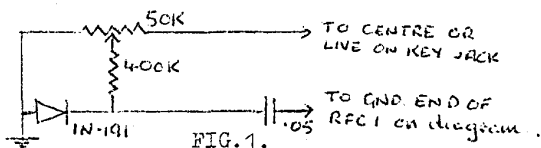
RECEIVER INCREMENTAL TUNING (R.I.T.) by David Earl-Clark (G5BIU)

Components:

50K Pot.

1N191 diode (1N191 or sim.)

400K 1/2 watt resistor.



"I mounted the 50K pot. on the front panel, centred between the Meter and the Kt al socket. The offset is about 0-850Hz, very useful in combination with the CWF-2BK filter. It is necessary to check the calibration after installation. To vary the amount of off-set, change the value of the resistor.

FULL BREAK-IN

To obtain full break-in with the HW7, simply remove C19, the 25uF electrolytic. The keying relay can follow my 20-25 w.p.m. without trouble! It's a bit noisy but no more so than my keyer.

HW-7 MODS. by Edgar Janes (G2FWA)

MAINS HUM or buzz can be a major problem. On one band the ground connections had to be on while on another band they had to be off! I say "had" because the mains power supply was disconnected in favour of a 12v. accumulator. Some say the type of Aerial and ATU have a bearing on this problem. The Jan.'74 QST article (QST) mod overcomes this problem.

AN ATTENUATOR in the aerial input (element across input, coax core to slider) helped in some cases of break-through. Attenuators seem to reduce unwanted signals (ie. in cases of cross-modulation) where the unwanted signal is not on the actual frequency, before wanted signals are reduced. I used a 300 ohm carbon pot.

The top right-hand panel control is far too sharp for receiver peaking. I've mounted the tuning capacitor on a bracket to make room for a Jackson Bros. reduction drive. A stiff wire (from a paper clip) has been soldered to this S.M. drive and serves as a pointer for the original panel markings.

LIGHTS: I purchased sub-miniature 6v. panel lights (probably stereo indicator bulbs?) and wired them in series across the 12v. supply. One bulb was fixed to the sub-panel behind and at the top of the dial while the other was arranged to side-illuminate the meter. The HW-7 looks so much more "alive" with a dial and panel light and serves as an indicator when the transceiver is switched on. The dial light was held in position by adhesive (araldite) and the bolt on the right hand side of the meter holds the bulb and provides the negative grounding of the two bulbs in series.

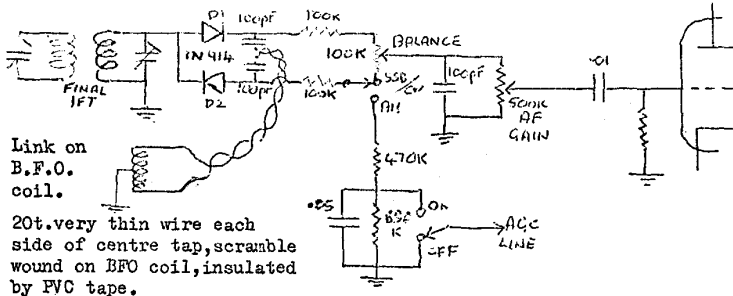
FROM "THE MILLIWATT", W6APW suggested :

"The need for a level control in the sidetone line was evident..and added. The small 500K pot is on the back panel. (to control line voltage to sidetone multivib.? - G3RJV) CROSS MODULATION was evident from local Broadcast stations and led to modification of the Front-end. Winding an antenna coil-link on the front end toroid, rather than the direct connection method used in the Heath circuit.

Next, the final variable capacitor was removed, and a capacitor of about half the size along with suitable fixed mica capacitors was added to the various tank circuits for each band. This makes final tuning for each band occur at about half capacity of the final condenser, and

RECONSIDERING THE G2FWA PRODUCT DETECTOR. (Notes by Gerry Farrance G3RJV)

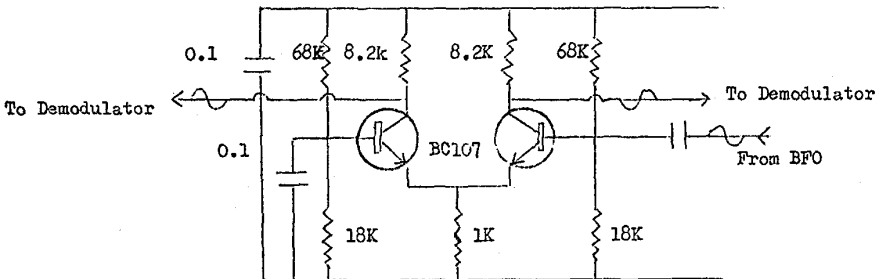
Last month I published a circuit by Edgar Janes G2FWA, of a product detector suitable for QRP CW and SSB use - G2NJ uses it in his HRO and claims that he owes much of his QRP success to the circuit. BUT I MADE AN ERROR IN THE CIRCUIT! The correct circuit is :-



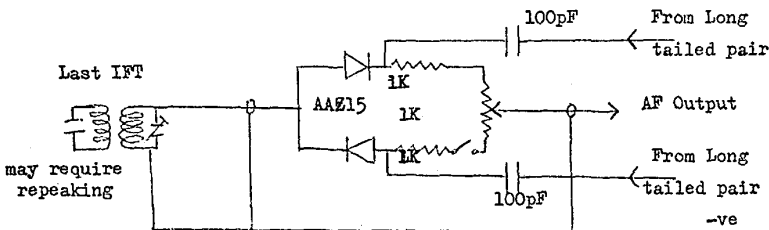
NOTE IN LAST MONTH'S CIRCUIT DIAGRAM, D2 WAS REVERSED. (G3RJV.) This error was spotted by Gerry Farrance who reprinted the circuit in the M.A.R.S. Newsletter, he also adds the following extra ideas.

USING THE CIRCUIT WITH TRANSISTOR RECEIVERS:

1. Many receivers fitted with a BFO coil utilise a coil within a Ferrite Pot, making the centre tapped winding for phase splitting impossible. The circuit of the long tailed pair shown below was used to overcome this problem.



2. The values given in the original circuit appear to give too much overall signal attenuation on a transistorised RX, so the following values were used, with success.

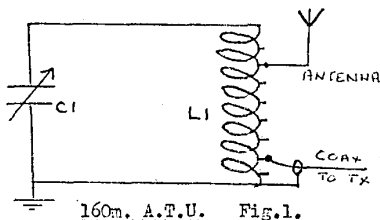


3. Gerry also included a circuit for a suitable BFO which I hope to include in the next copy of SPRAAT. He ends by saying - 'now I have become a very firm ~~firm~~ believer in product detection methods of receiving CW and SSB.'

Gerry

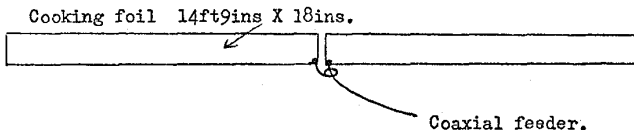
TWO MORE AERIAL IDEAS from 'Gus' Taylor (G8PG)

Being disatisfied with my lash-up a.t.u. for 160m. I scrapped it and built the unit shown in Fig.1. In this circuit L1 is 70 turns of 28swg wound on a 1" former. The coil is tapped every 5 turns for the first 20turns, then every 10turns for the rest of the winding. C1 can be any value between 200 & 500pF. Adjustment is simple. The coaxial lead from the TX is moved up and down the taps on the first 20 turns to find the point which gives the best loading, and the aerial is similarly moved up and down the remaining taps. With my 90ft. aerial, the coaxial lead is tapped 10turns up from the earthy end of the coil, and the aerial is tapped 40 turns up from the earthy end. These settings really suck the r.f. out from the 2w. TX. Results so far have been very encouraging, including an S-9 report from F40BWL.



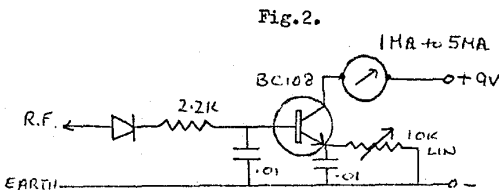
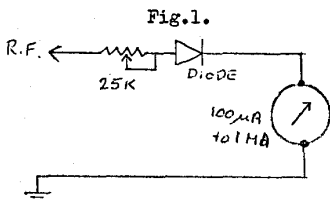
This is an idea from Germany, which was reported by G3VA in "Technical Topics". It is for broad-band indoor dipole (it could be used outdoors, but mechanical problems are complex) The dipole proper consists of 18" wide aluminium cooking foil, and it is fed by a 72 ohm standard coax cable. The original information suggested that it could be made shorter than a conventional dipole, the length suggested for 14MHz being 11ft 3in per side. When erected to this length and checked with a GDO it was found to resonate at approx. 17MHz with a bandwidth in excess of 1.5MHz. Increasing the length to 14ft.6in. per side gave resonance at 14MHz with a similar bandwidth. The antenna was erected by pinning the foil to the roof beams in the loft with drawing pins. To check resonance a woodscrew with a washer was screwed through the inner end of each length of foil, and a two turn link was secured under the washers. The GDO was then coupled to the link coil to allow the measurements to be made. Once the antenna had been resonated on 14MHz the link coil was removed and the two ends of the coaxial feeder were secured under the washers. In some 3 hours of tests on 14MHz, 7 different European countries were worked with 2 watts and the antenna looks promising indeed. It has proved impossible to solder the foil, but for indoor use screw connections should present no trouble. The height above ground is about 24 feet. If anyone does know a method of soldering onto thin foil please send it to SPRAT. (Not the one using a blob of oil - for so reason this does not work on thin foil) The foil is too fragile for outdoor use, and the use of thicker material would present some horrible wind resistance problems, but for loft use this idea really seems to work.

INDOOR FOIL ANTENNA. Fig.2.



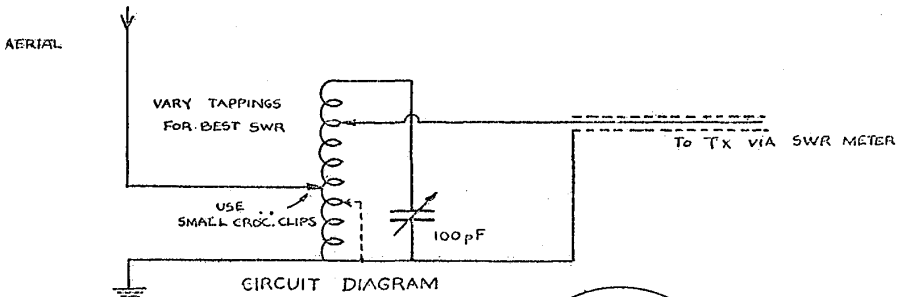
SIMPLE R.F. POWER INDICATION. by G.C.Dobbs (G3RJV)

When building up and using QRP equipment, the need often arises to measure the level of R.F. output. It is well-known that QRP PA stages are usually better tuned for actual R.F. output rather than meter dips - this is the principle of the HW7 relative power meter. Below are two basic circuits for R.F. output indication, they are so basic I feel almost embarrassed to offer them. However, if you have not built up such a unit, do so, it will become indispensable. The indication is only relative, but calibration is possible.

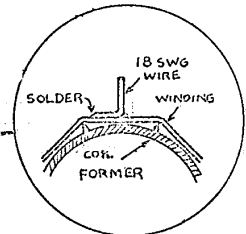
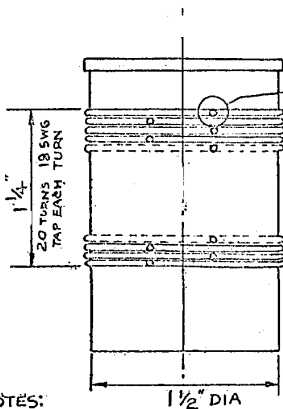


A.T.U. UNIT by Keith Simpson(G4DQE)

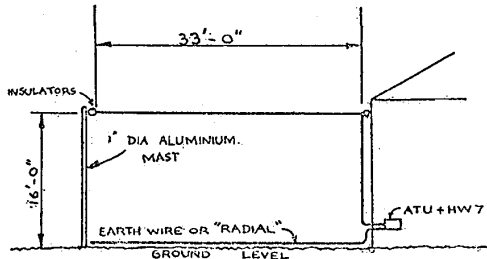
This unit has been used by Keith with his HW-7 with success on 40m. It helps to solve the problem of 40m. operation without the need of a 66ft straight run in the garden. As Keith points out, the idea is by no means new, but like many old ideas it keeps re-appearing in new forms to prove it's utility. (The article also provides an illustration of the fine graphic work of Keith, which he has offered to use for the club!)



COUNTERPOISE EARTH



SECTION SHOWING DETAIL OF TAPPING.



TYPICAL AERIAL INSTALLATION IN SMALL BACK GARDEN

NOTES:

1. TAPPINGS STAGGERED FOR EASY CONNECTION.
2. AVOID SHORTING TURNS.
3. SHORT CIRCUIT SOME TURNS (EXPERIMENT) AT BOTTOM OF COIL FOR 20m & 15m
4. LAYOUT NOT CRITICAL.
5. KEEP COIL AWAY FROM LARGE METAL SURFACES. USE WOOD OR PERSPEX BASE BOARD

AERIAL TUNING UNIT FOR THE HW-7

MAY ALSO BE USED WITH OTHER TRANSMITTERS UP TO 10 WATTS

Q.S.A. By W.E. Caughey, G12DZG.

The writer's introduction to the hoby came by way of listening to the amateur bands on the family's all-wave radio, A.M. then being the mode for phone working. This was back in the mid-thirties when there were more battery powered receivers than mains ones. With no mains installed at the QTH, the writer had no choice but batteries and accumulators to power the 0-V-1's & 0-V-2's then constructed. Valves had 2 volt heaters, or filaments as they were named, and these required a weekly trip to the local radio shop to have the accumulator charged. Cash was not a plentyful commodity for most people in those days and, although components were considerably cheaper than today, various ruses were used in construction. Coils were wound on old valve bases and the brass vaned variable capacitors manufactured by a firm, Wingrove and Rogers, under the brand name 'Polar' and of 500 mfd size, lent themselves by their construction, to simple modification to reduction to capacities for S.W. coverage. Most layouts were of the breadboard type, all earth returns being made to the baseboard which was covered with perforated zinc or tinfoil which was slightly thicker than the present day cooking foil used by the XYL. Chassis construction became popular in the late 30's when such valves as the 6L6 became available in the UK.

On the transmitting side, in pre-war days the maximum input power was 10watts, except for a few stations who were granted permission to use a power input of 50 w. Thus, compared with today, most amateurs were QRP stations and did fine work despite the limitation. As we all know QRO versus QRP has been the subject of much debate in recent years and it is not proposed to dwell on it here, suffice to say that there is a place in amateur radio for QRP operation and that evidence shows this to be so. It is up to us to put the UK on the map in this respect
Vy 73's Walter.

NOTE.... Walter is our only GI member but we hope the numbers will grow. As for the battery powered 2 volt valve rigs, they can still do excellent work. The ever intrepid Albert G2AYS using a 2 volt battery CO/PA rig and Old-Timer 'Pop'Goldie, G3CQE works into Europe with an Osram P2 CO. G3RJV.

CRYSTALS AGAIN.

I regret that J. Birkett ran out of the 3550 crystals quite so soon. He does appear to have some crystals L.F. of the 80m. band and I will ask him to sort some out (if he will) Gordon - G3DNF - has ground most of his 80m rocks up from about 2800Kcs, although it is hard work. In the next SPRAT we may do a piece on Xtal grinding - a dying craft !. The club would be grateful for any other information about amateur bands crystals and where they are available. It may be that if the club members can place a bulk order with a sockist, we may be allowed a discount price. Perhaps we could arrange a crystal SWAP/SALE section in the SPRAT. If any members have crystals in surplus for a particular band and want to either sell them or swap them for other frequencies, will you please let me know in time for the next SPRAT.

S.W.L.'s and QRP.

I have written to the SWL columns in the Rad.Com. & S.W.M. to point out what a useful service SWL's can perform for QRP stations. I intend to prepare a leaflet for S.W.L.'s for guidance in monitoring and preparing worthwhile reports for QRP stations especially on 80m. I hope that-1) Members who operate QRP rigs on 160 80 and 40 will respond with QSL cards to USEFUL SWL reports. 2) S.W.L.'s will be encouraged to monitor and report QRP signals, in relation to condx of band, other stations hrd etc. This may increase SWL listening to CW signals. 3) S.W.L.'s will, perhaps, by their interest in QRP monitoring, and the economy of QRP operation, be attracted to QRP working & membership of the club. ANY IDEAS ??

CONGRATULATIONS

to JOHN GELL (BRS 34512) of Nottingham, in passing his R.A.E. Well done John, get going on the CW and we hope to see you on QRP. In the meantime John has offered to listen for and report any stations who require reports. Address : 34 Glapton Lane, Clifton, Nottingham. He'd be glad to hear from you.