

SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED TO LOW-POWER COMMUNICATION

ISSUE NR. 71

© G-QRP CLUB

SUMMER 1992

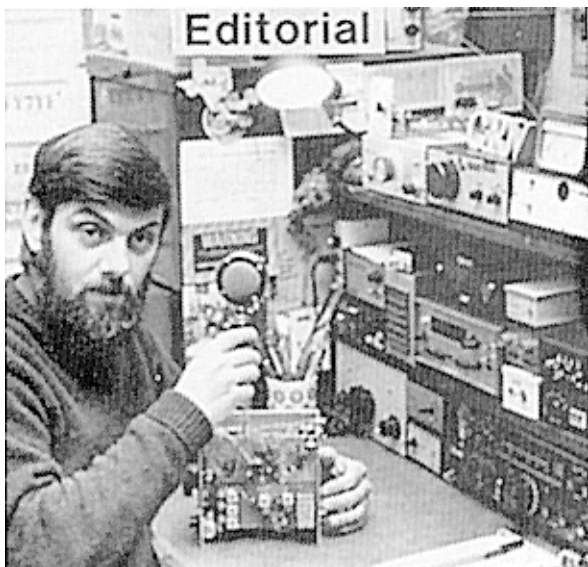


THE RECIPIENTS OF THE QRP ARCI HONOR ROLL AT DAYTON

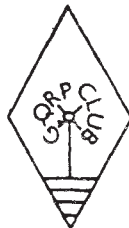
This award for QRP service was presented for the first time ever to [left to right] George Dobbs G3RJV, Roy Lewellen W7EL, Randy Rand AA2U, Doug DeMaw W1FB

THE G3TDZ PHASING RECEIVER S METER DRIVER NO-COST ATU MKII
NAT TRANSMITTER K4TWJ QRP PEN QRPp VSWR METER IC735 MODS
IMPROVED RF SNIFFER MIZUHO TRANSCEIVER MOD BETTER T-PIECE
HW9 SELECTIVITY RX POSTSELECTION FOR CW FET VOLTMETER
GROO SSB CONSTRUCTION DAYTON 92 NEW K7YHA BOOK REVIEW
MINI-CONVENTION 92 FREE PRIZE DRAW COMMUNICATIONS FORUM
NOVICE NEWS VHF NEWS SSB NEWS MEMBERS NEWS CLUB OFFERS

JOURNAL OF THE G QRP CLUB



Rev. George Dobbs G3RJV



© G-QRP CLUB

**St. Aidan's Vicarage
498 Manchester Road
ROCHDALE, Lancs,
OL11 3HE. England.
Telephone and FAX
0706 - 31812**

A Plea From G3RJV

Somehow I have to reduce my amount of mail. Club mail is now running at about 50 letters a week. I work to a very tight timetable to get through what I do but the mail is now forcing itself into other areas. Because of the volume, most replies to club mail are running between one and three weeks late.

Oddly enough, about half of it has no need to come to me. I do not keep membership records, I do not deal with subscriptions and what I know about circuits published in SPRAT is less than the author. Could members please refer to the Members Handbook for the correct place to send club mail. All mail relating in any way to membership should go to **John Leak, G0BXO, Flat 7, 56 Heath Crescent, Halifax, HX1 2PW**. Technical queries about articles in SPRAT are best addressed to the author. I intend, whenever possible, to include the author's address with each article. General technical questions can be addressed to **Ian Keyser, G3ROO, Rosemount, Church Whitfield, Dover, Kent**, who has kindly offered to act as a circuit 'trouble shooter'. Please send a copy of the circuit with your letter. **G8PG** has kindly offered to deal with antenna questions: **A.D. Taylor, G8PG, 37 Pickerill Road, Greasby, Merseyside, L49 3ND**. Please send Gus details of your site layout and station facilities.

This is not intended as a complaint. I enjoy contact with members. It is more a matter of self-defence! In the time I allow myself for the hobby, I do really need some more workshop time and I have not been on the air, at all, since the Winter Sports. Letters that are more than welcome are items for SPRAT. A simple drawings and brief notes are enough - we can do the rest. SPRAT is all about sharing ideas.

72
[Signature] G3RJV

THE G3TDZ PHASING RECEIVER

For Use with White Rose Converters John R. Hey G3TDZ

8 Armley Grange Crescent, Leeds, LS12 3OL

A Phasing receiver phases or cancels out the image or other sideband in exactly the same way in which a phasing type SSB exciter generates a single sideband.

The very day the prototype board for this design was tested, Sprat arrived where G7BCJ described his most excellent little receiver. I was delighted to read his findings as these confirmed my own results. When even a very strong SSB station is tuned in, switching to the other sideband results in either complete silence, or the most awful shindy, which would have made reception on a simpler DC receiver difficult if not impossible.

The circuit described is a little more complicated yet only employing the simplest of components. There are no expensive filters, crystals etc., only resistors and capacitors and common op-amps, yet due to the phasing action and 8th. order active filtering, selectivity compares with most superbets.

Designed to operate with the range of White Rose converters, the input circuitry is similar to the White Rose receiver described earlier. A cascode RF stage allows sufficient gain, low noise, selectivity against images, control of RF gain, tuning 6 - 6.5MHz. This feeds two mixers in parallel using the common 1496 chips. Input from the VFO (to be described later) is amplified by Q3 which feeds the RF phasing networks R22-25, C15, to produce a zero I and -90deg Q pair of signals to feed the mixers.

Third order Butterworth filters at 2.2kHz follow the mixers, where a x3.5 gain inverter completes the p-p drive to the audio phase shift networks. These use off the shelf 1% resistors and polystyrene capacitors, to provide a further plus and minus 45 deg pair of outputs. After buffering, the two sets of audio signals are combined in U6c; by switching in the inverter U6b, a choice of USB or LSB is obtained. Two further filter stages, a third order Butterworth followed by a second order Chebychev ensure sharp SSB selectivity. For CW, a further band-pass filter is switched in.

A 6270 VOGAD chip provides audio gain and AGC action, then feeding the volume control and the LM380 power stage. The low level stages operate from a 12v regulator U10. An improved S meter circuit completes the receiver.

The whole receiver except the VFO is accommodated on a single PC board measuring 3" x 6.4". Where three gang 50p tuners are difficult to obtain, provision is made for adding series capacitors of 56p to RF and mixer tuned circuits. (Shown dotted). The working receiver has a twin tuning gang coupled to a single section. There have been seen at rallies recently in either 47p or 75p versions. For 75p caps, the series caps will be about 120p. Circuit do a neat side action S meter complete with 12V bulb.

G3TDZ PHASING RECEIVER PRINTED CIRCUIT BOARDS

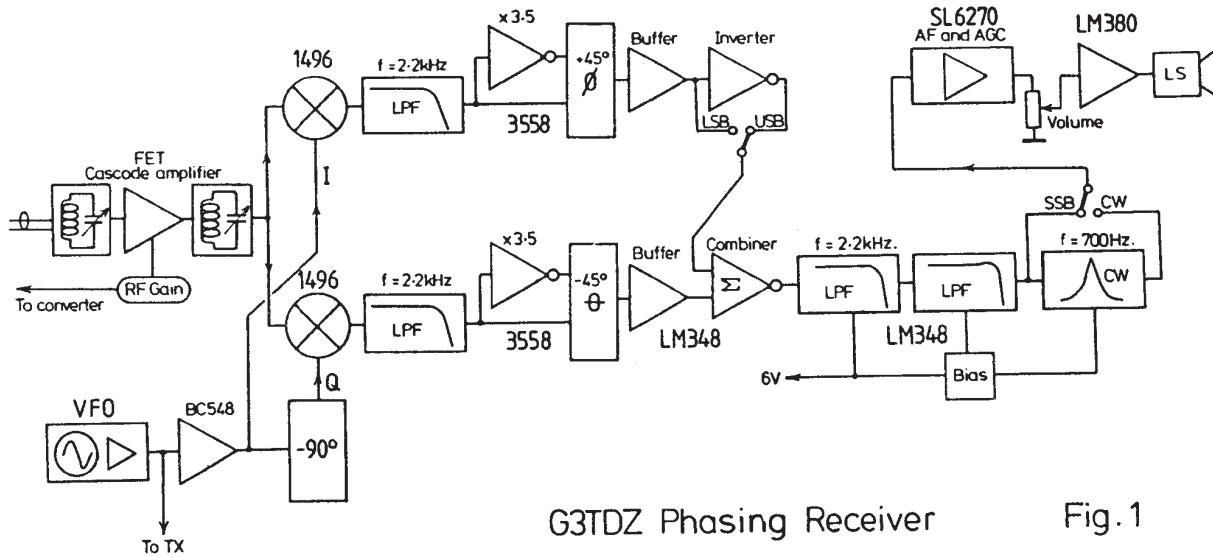
By the time this issue of SPRAT is released we hope to be able to supply a printed circuit board for the new G3TDZ Phasing Receiver in this article

The price will be £5.00 plus 58p for padded bag and postage

Please send your orders [Cheques : 'G QRP CLUB'] to:

Dave Aizlewood, G4WZV, 36 King Street, Winterton, Scunthorpe, DN15 9TP

Dave still has some Converter Boards at £1.25 and MK1 RX Boards [SPRAT 61] at £2.00



G3TDZ Phasing Receiver

Fig. 1

G3TDZ Phasing Receiver

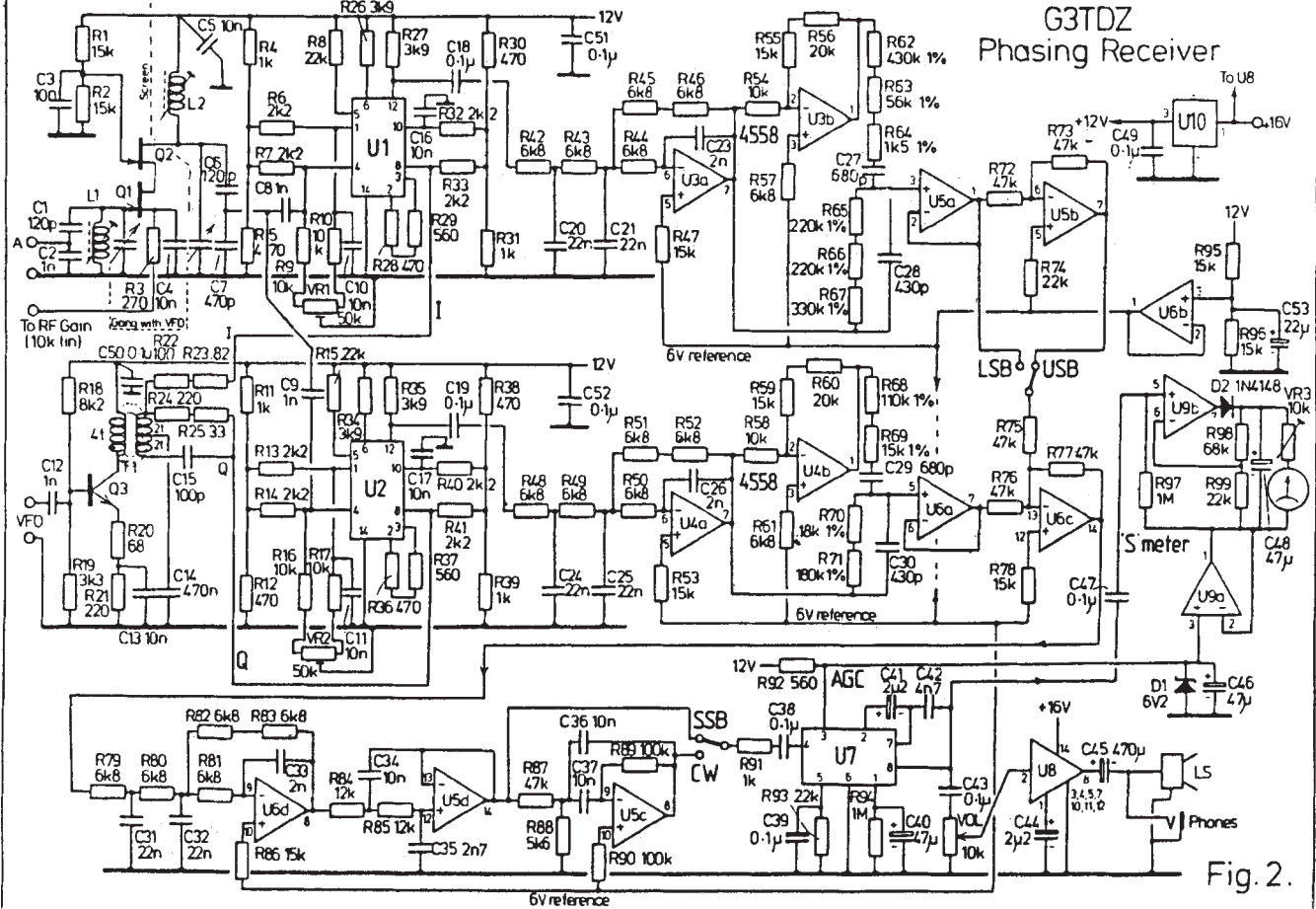


Fig. 2.

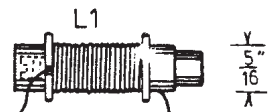
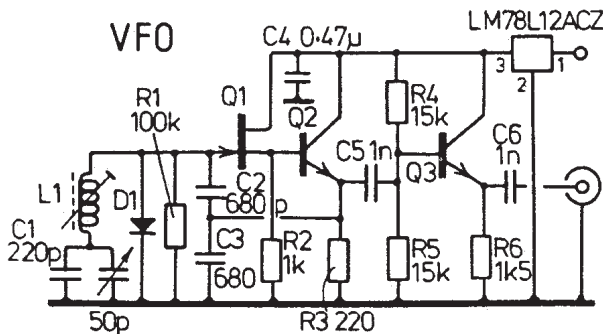
CONSTRUCTION AND SETTING UP

Printed circuit track on the upper surface of the board is only soldered where resistors are located, so no difficulty in soldering should be experienced. A tin plate screen 1/2" tall is soldered as shown. Keep wires to the tuning gang short. All control and signal wires should be routed and gathered into a loom down the left hand side of the board, away from the tuning components and VFO.

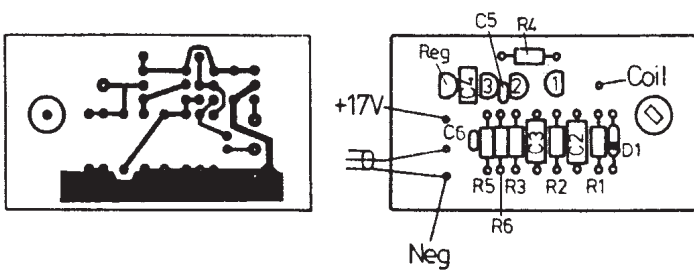
With the values shown, there is no need for precision trimming of phase shift or audio level circuitry. The two balance trimmers on the mixers are adjusted for a null at pins 12 of each detector using an oscilloscope or millivoltmeter. This overcomes the Radio Moscow effect and reduces most of the odd effects associated with DC receivers.

A simple power supply based on a 12V transformer is all that is necessary as both the receiver board and the VFO have their own stabilisers. Input will be about 16 - 17V DC.

Where difficulty is experienced obtaining 2000p polyester capacitors, provision has been made on the board for fitting two 1000p for C23 and C26.

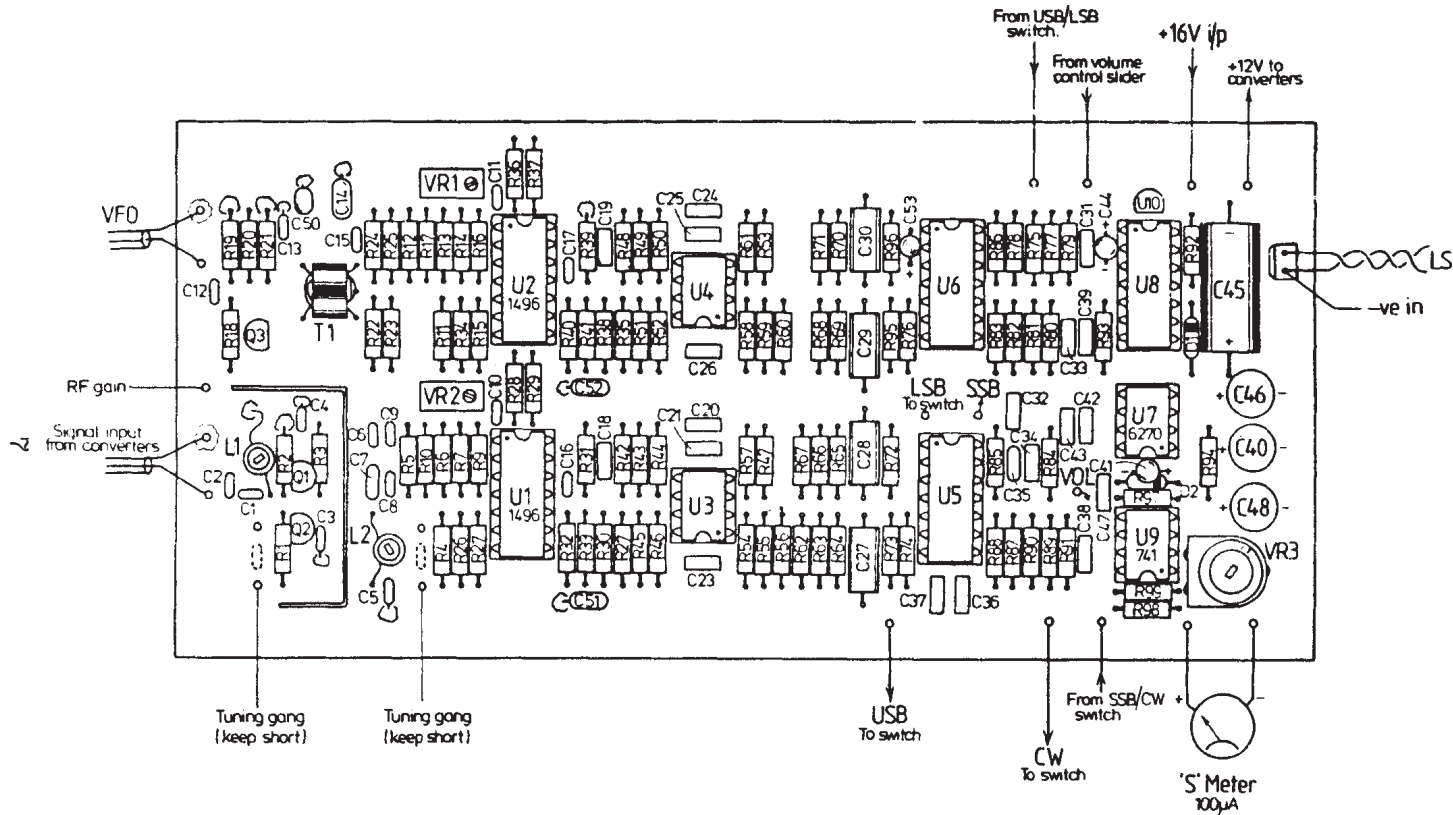


- C1 220p polystyrene
- C2,C3 680p "
- C4 0.47µ polyester
- C5 C6 1n ceramic disc
- D1 1N914, 1N4148
- Q1 2N3819
- Q2, Q3 BC548



PCB HALF SIZE [FULL SIZE COPY : SAE TO G3RJV]

The VFO is a very stable design tuning 6 - 6.5MHz. For good mechanical stability, it is a good idea to cut a rectangular hole in the chassis plate, then mount the printed board underneath, using the same screws as the tuning gang. The coil is mounted close to the tuning cap, a feed-through insulator taking the hot end through to the board. The 5/16" former can be an Aladdin or one removed from an old CTV convergence board. If a transceiver is desired, the VFO will feed both the receiver and a White Rose SSB exciter board.



G3TDZ Phasing receiver

Fig. 3.

RESISTORS all 5% except where marked

R1,2,47,53,55,59,78,86,95,96	15k
R3	270
R4,11,31,39,91	1k
R5,12,28,36,30,38	470
R6,7,13,14,32,33,40,41	2k2
R8,15,74,93,99	22k
R9,10,16,17,54,58	10k
R18	8k2
R19	3k3
R20	68
R21,24	220
R22	100
R23	82
R25	33
R26,27,34,35	3k9
R29,37,92	560
R42, 43,44,45,46,48,49,50,51,52,57,61,79,80,81,82,83	6k8
R56.60	20k 1%
R62	430k 1%
R63	56k 1%
R64	1k5 1%
R65,66	220k 1%
R67	330k 1%
R68	110k 1%
R69	15k 1%
R70	18k 1%
R71	180k 1%
R72.73.75.76.77.87	47k
R84,84	12k
R88	5k6
R89,90	100k
R94,97	1M
R98	68k

CAPACITORS

C1,6	120p plate
C2,8,9,12	In Cer
C3,4,5,10,11,13,16,17	10n cer disc
C7	470p cer
C14	0.47uF monolithic
C15	100p plate
C18,19,38,39,43,47,49	0.1uF polyester
C20,21,24,25,31,32	22n polyester
C23,26,33	2n polyester
C27 29	680p 1% polystyrene
C28,30	430p 1% polystyrene
C34,36,37	10n polyester
C35	2700p ceramic
C40,46,48	47uF 16V elect.radial
C41,44	2u2 tant
C42	4700p polyester
C45	470uF 16V elect radial
C50,51,52	0.1uF monolithic
C53	22uF tant

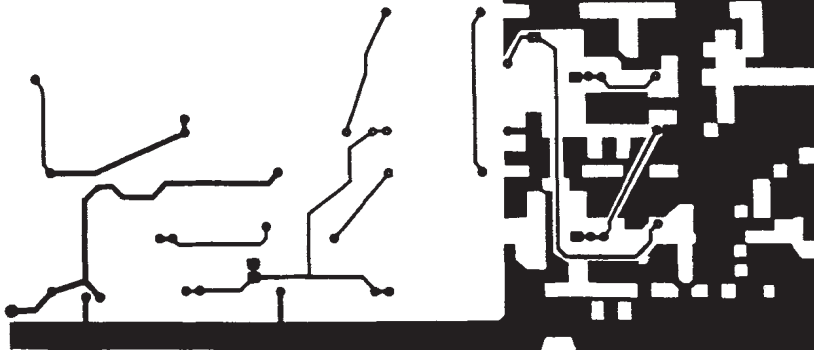
SEMICONDUCTORS

D1	BZX79C6V2
D2	1N4148
Q1,Q2	2N3819
Q3	BC548
U1,U2	1496
U3,U4,U9	4558 or LF353N
U5,U6	LM348N
U7	SL6270
U8	LM380N
U10	LM78112ACZ

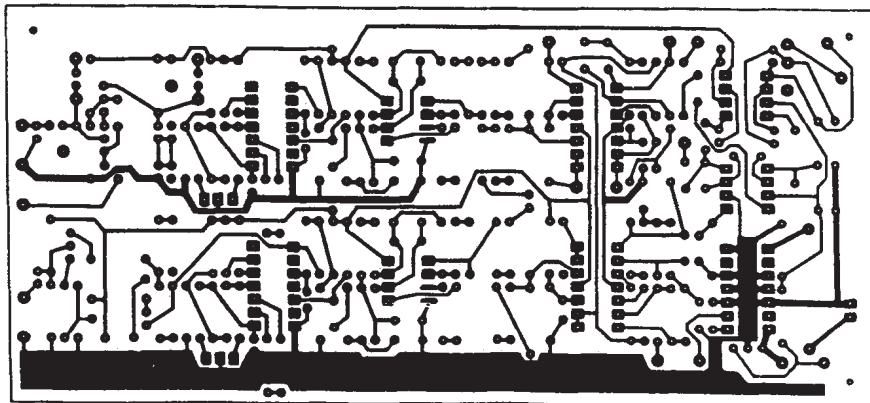
INDUCTORS

L1,L2	28 turns 36SWG close wound
T1	2 x FX1115 4 turns pri. 2 plus 2 sec.
VR1, VR2	50k 3/8" multiturn
VR3	horiz trimmer

G3TDZ Phasing receiver



PCB HALF SIZE [FULL SIZE COPY : SAE TO G3RJV]



S METER DRIVER Derek Money G3HKD

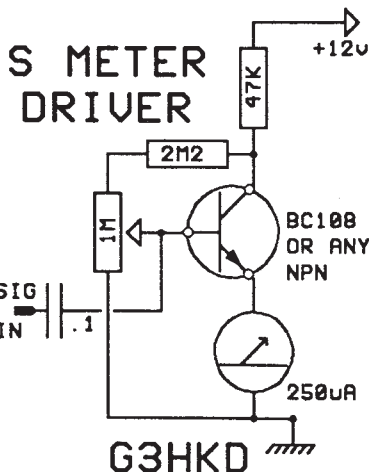
125 Wroxham Road, Norwich, Norfolk

Almost all the audio driven meters I have tried in the past won't work on small signals and when the level is adjusted to make them go, they try to pin the end stop. This one appears to work the other way round

The 1M pot is adjusted for zero current on the meter with no signal and the 47K ensures that the collector volts drop to near enough zero at 250 micro-amps.

In effect the meter is extremely sensitive on small signals, and as more current is drawn, the transistor progressively turns itself off. It appears to work very closely to the logarithmic dB meters on the old agc driven S Meters. Its also makes an extremely sensitive RF Sniffer.

But note that if a meter of differing current fsd is used, the correct collector resistance must be calculated again.

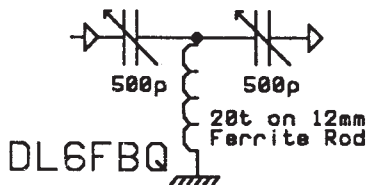


NO COST ATU MKII

Gustav Michalik DL6FBQ

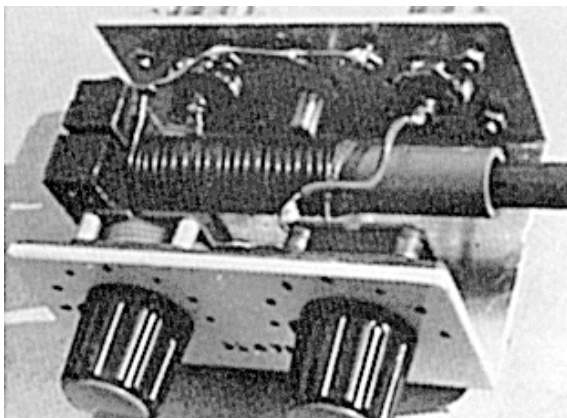
Mozartstrasse 16, W - 4902 Bad Salzuffen, Germany

NO COST ATU II



Inspired by the article in the G QRP Club Circuit Handbook p. 65 by Tony Haas, G4LDY, I built a mini-match using the same variable inductor : a ferrite rod sliding in a former. Tony's circuit was a Pi-Filter [Collins] but mine is a T-Filter because of my end-fed 41.4m wire, 7m high. My experience is that it gives excellent results. On 80, 40 and 20m I can tune my antenna to 1:1 SWR. The rod fully in the coil on 80, half way on 40 and out of the former on 20.

The ferrite rod has a diameter of 8mm and the coil is wound on a plastic tube 9mm inner diameter [12mm outer] about 8cm long. The 20 turns occupy a length of 4cm. The two variable capacitors are of the polyvaricon type used in broadcast AM radios. Both variable capacitors must be insulated from ground. The case is homemade from two U-shaped parts.



THE 'NAT' (Not Another TX) TRANSMITTER George Burt GM3OXX

1/5 Essendean Terrace, Clermiston, Edinburgh

Aye, I know! Not another simple TX from OXX. It came about by think of a simple rugged wee TX for the club novices.

The idea was to revamp an old style valve TX, by using two V mosfets in push pull, so it could run a few watts out without it dying the first time the key was held down long enough to tune the ATU.

A few VN66AFDs were bought as that was all our local shop had.

A PCB was made and circuit built, but nothing worked "OH", had been using what I thought was the correct base connections for the VN66AF from the Siliconix handbook, but the VN66AFDs are different. So, after the leads were crossed over it all worked.

There is not a lot more to say about the circuit except it works well, is rugged and 50% efficient.

Of course, it can be made to run on other bands and if you remove the fixed cap across the drains, will run on 40 but not "correct."

As the idea was for a novice TX, three boards were made and all worked fine.

A test was done using only the TX output tuning as I don't have a low pass filter or swr meter capable of handling the power out. I could only test it to 15V as my power limits at one amp

With a 50 load and an HP power meter. The voltage was done in 1V steps with the standing current adjusted for each step at 100 mA

10v	830mA	4.2w out
11v	900mA	5.2w out
12v	1 amp	6.1w out
13v	1.05 amp	7w out
14v	1.1 amp	7.8w out
15v	1.15 amp	8.6w out

THE VN66AFD [Not Same pin-out as VN66AF]
IS AVAILABLE FROM RAPID ELECTRONICS
TEL: 0206-751166 [Price 0.95p in one offs]

Will be a bit less through a low pass filter but more than enough

CONSTRUCTION NOTES

No attempt was made to make it small so the PCB has lots of room.

The only difficult part will be winding L1&2. I used .71mm (20swg) and .40mm PTFE covered (20swg O.D). When winding L1 cut 18 inch of .71mm fold in two, twist for half an inch, scrape clean and solder the twist.

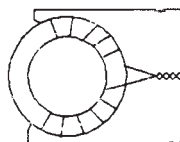
Then start by winding ten turns to the left, and ten to the right. Try not to wind to tight, as it will make it easier for the link winding. Now cut 18 inch of .40mm PTFE, start at one end and wind 19 turns between the 20 turns of L1.

(Remember as soon as you pass the wire through the toroid its one turn).

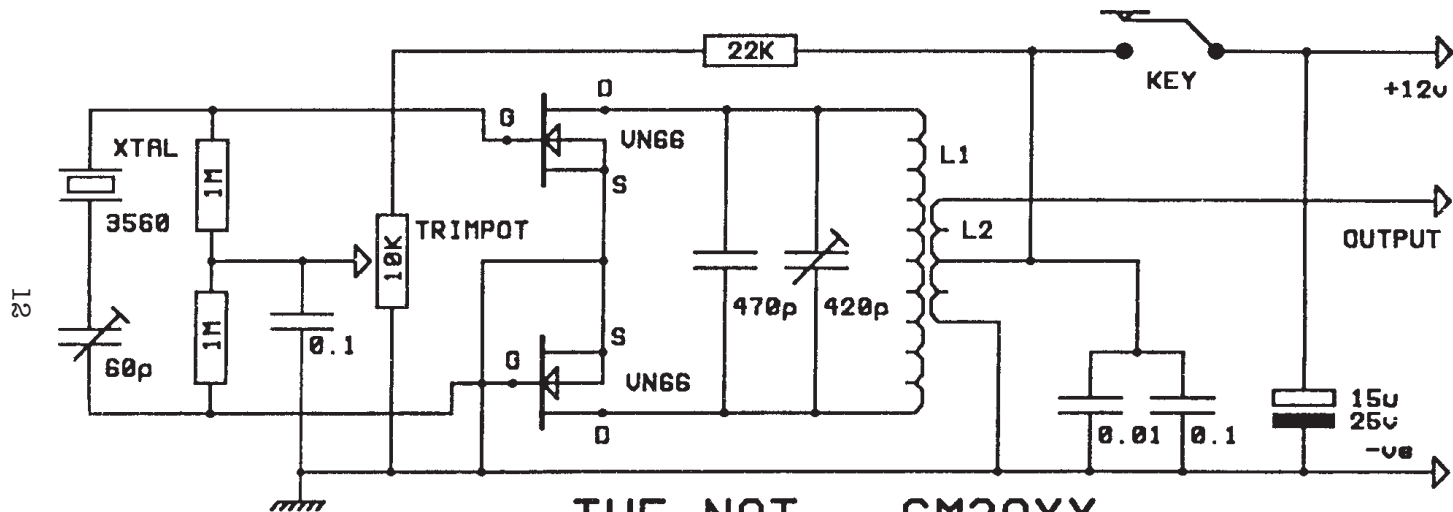
If you can't find any .40mm PTFE any thin gauge PVC will do but L1 may need to be reduced to .5mm, if the link wire is bigger than 20 SWG O.D. because its a tight squeeze.

When setting up, with no xtal fitted, key down adjust rim pot for a 100MA standing current, fit xtal and tune for max. smoke.

No extras have been fitted, but pass keying low pass filter and aerial change over have been left to you.



WINDING L1



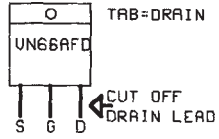
THE NAT GM30XX

L1 20t .71mm [20ewg]

L2 19t .40mm PTFE [20ewg od]

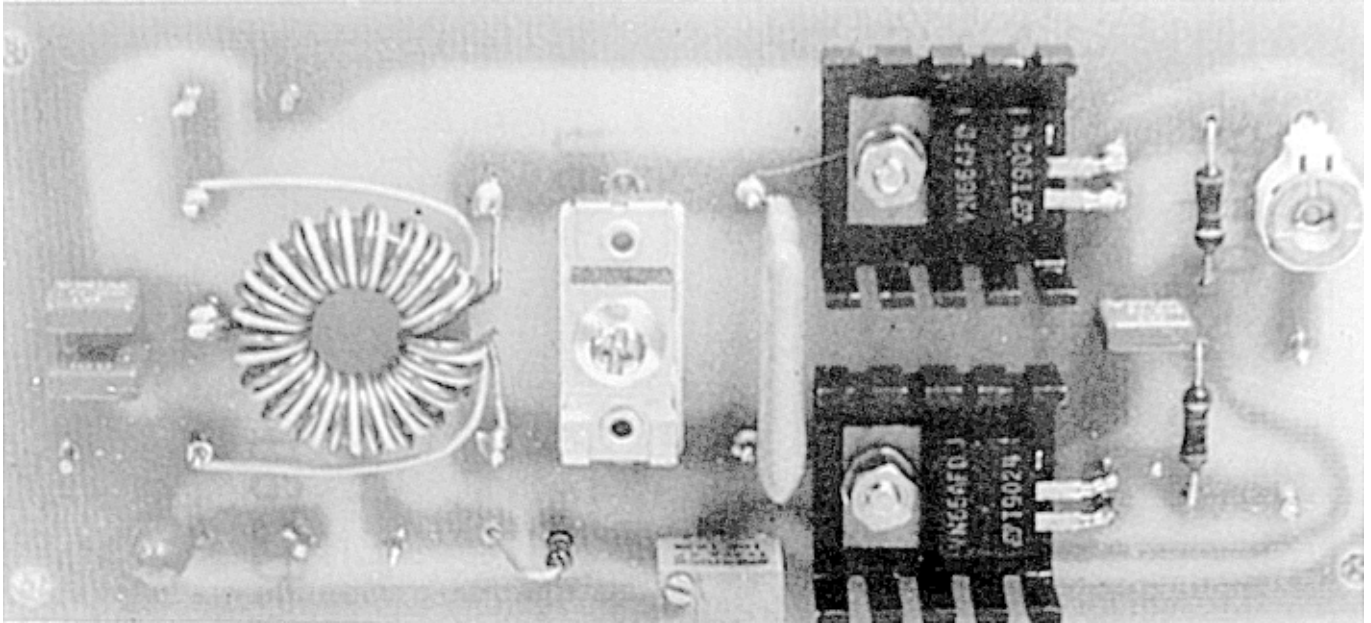
WOUND ON T68-2

SEE TEXT



420pF TRIMMER
TANDY CAT. No.
272-1336

NAT LAYOUT



THE K4TWJ QRP PEN

Dave Ingram K4TWJ

4941 Scenic View Drive, Birmingham, Alabama 35210. U.S.A.



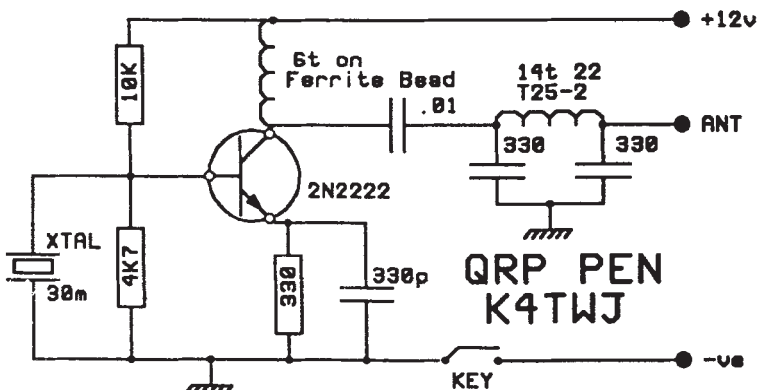
Some time back I decided to really go QRP in style. Rather than building another QRP rig in a conventional box where I must add an external power supply, key etc. I put everything into a small package. the result was my 350mW transmitter built into a larger size ball pen case. This little gem is shown in the picture. The push button at the top is the key. Inside there is a 12 v battery and full transmitter circuit. The antenna connections are at the bottom of the pen.

I can walk up to a transceiver at a rally, tune to 10.105MHz, and start sending to the rig. At home I have used this transmitter to contact several stations in five countries.

The circuit uses one 2N2222 [or 2N3904 or ZTX651] transistor in a basic oscillator arrangement. The schematic is shown. Power is supplied by a small cigarette lighter battery obtained from Radio Shack. This battery is slightly smaller than a regular 'N' 1.5v. cell. By removing the outer wrapper, it will slip into the cap of the pen. Wires from the top 'key' also slip by the battery. the circuit is built 'open air style' and slipped into the pen base. The crystal is very small and slides into the base right where the cap fits on the pen.

It continues to be a source of amazement and creates excitement every time I show it. Now the QRP Pen has worked several countries - my next project is putting the receiver in with it!

Dave is a regular columnist for CQ magazine and author of several books including "Keys, Keys, Keys"



N.B.T.V.A.

The Narrow Bandwidth TV Association (founded 1975) deals with the mechanical and low definition modes of ATV. All TV cameras and receivers are "home brew" and construction is inexpensive. Some basic skills with a saw, hand-drill, and soldering iron are an advantage.

NBTV produces moving pictures and should not be confused with Slow Scan. A bandwidth of 6-7 KHz. is needed and recording of signals on an audio cassette recorder is possible.

The annual subscription is £4.00 (or £3.00 plus the plastic wrapper in which a recent "Sprat" arrived). This covers a 12 page quarterly newsletter and an annual exhibition in April/May in the East Midlands.

Apply to the Membership Sec., D A Gentle G4RVL, 1 Sunny Hill, Milford DE5 0QR, enclosing a crossed cheque or PO. payable to "NBTV".

FURTHER NOTES ON THE QRPp VSWR METER [SPRAT 69]

Ha-Jo Brandt, DJ1ZB, Lohensteinstrasse 7/b, D - 8000 Munich 60

The construction of a second version of this device revealed a problem which led to a slight modification of the original circuit. When trying to align the meter it was impossible to get a better reflected minimum than $S=1,2$. Comparing the differences in the construction of the first and the second version, the problem has obviously been aggravated by the smaller cross section of the screened area 1. In the first version, this section was 30 by 30 millimetres, but in the second just 16 by 20 millimetres. This led to an additional capacitive load for the 430 ohms resistors across the current transformers, causing some phase shift of the r.f. voltage generated. Luckily however, the whole construction could be saved by introducing another phase shift in the capacitive divider, by inserting a small resistor in series to the 56 pF capacitor. When a potentiometer of 47 of 100 ohms is used at first for this purpose, an exact null can be achieved even at 30 MHz by alternate alighting of this resistor and capacitor C2. Then this resistor is measured and replaced by a suitable fixed value, and the alignment repeated by adjusting C2 alone.

For the second version, the optimum value had been 39 ohms. After this solution had been found, the first version was investigated again to see if any improvement could be reached. Here the best obtainable minimum had been $S = 1,05$ at 30 MHz. By inserting a potentiometer it was also possible to get an exact minimum, and the optimum resistor value was found to be 22 ohms.

For safety reasons, the dissipation rating of this resistor should be in the 0.5 to 1 watts range. The maximum dissipation will be needed when the maximum power of about 16 watts at 30 MHz is applied to the meter. Therefore, the general aim must be to need a resistor as small as possible for correct alignment, and this can be achieved by a construction maintaining a parasitic capacitance across the current transformers as small as possible. For a general relief of this problem, the load resistor of the current transformers could be reduced to 390 ohms or even less, but this would also lower the maximum sensitivity of this meter (about 5 mW for full deflection to the SET point).

IC735 MODIFICATION

Dr. Gordon Bennett G3DNF

Further Reduction of DC/DC Converter Noise

The modifications described in SPRAT 68 dealt with the problems caused by harmonics generated by the on-board DC/DC Converter [IC19], which runs at about 7kHz. Harmonics falling within the IF passband were avoided by detuning the DC/DC converter by up to 1% for optimum results. Further experience has shown that various external influences, such as change in temperature and supply voltage can upset this adjustment.

A radical but simple, new modification eliminates all the problems previously encountered. This is to replace C315 [.001uF] by .01uF, thereby reducing the oscillator frequency of the DC/DC converter from 7kHz to 700Hz. Rf harmonics generated by IC19 then become insignificant and there are no more 'birdies' in the front end or heterodynes in the IF passband [PBT] range.

Despite fears of possible AF pick-up, there is no discernible 700Hz tone from the AF amplifier section. The general effect of the modification is to make received signals sound clearer and cleaner, while operation of the 'PBT' control is much sweeter.

The modification may be made instead of, or in addition to, those previously described. Refer to SPRAT 68 for the method of getting to C315.

SOME RUSSIAN CW QSO 'SLANG' from Igor Grigorow of the U QRP Club:

MY QSL OK = MY QSL BUDET, TNX = BLG, SPB, HELLO = ZDR, GOODBYE = DSW,
HAPPY NEW YEAR = S NOWYM GODOM, HAPPY CHRISTMAS = S ROZHDESTWOM.

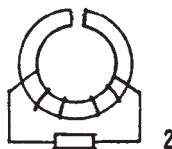
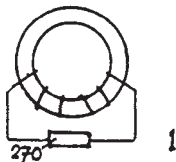
IMPROVED RF SNIFFER Ronnie Marshall GM4JJG

"Hillcrest", Hillside Road, Gourock, PA19 1NP

The Ken Maxted [GM4JMU] RF Current Transformer [SPRAT 52] is better than my RF Sniffer [SPRAT 51] because it is loaded with a resistance and will indicate at a current loop only

BUT- if you are testing a feeder and aerial outside to find where the current loops are, you have an impossible job with slotted ribbon feeder as you cannot slip on the toroid - as is true of any open wire feeder with spacers

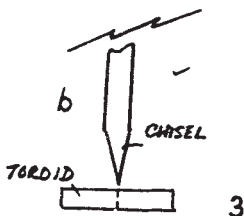
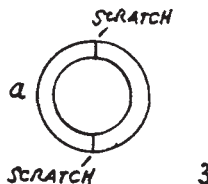
My idea of slotting the ferrite toroid gets over this, you can hook the thing anywhere on the wire - add Ken's loading resistance and you have a handy gadget.



BUT- ferrite is as hard as glass, you can eventually hacksaw through it, but end up with a worn-out blade or ruined needle file and a slot so narrow as to admit nothing thicker than about 20 swg - useless on slotted ribbon or thick wires.

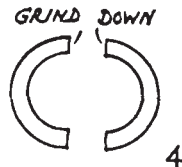
The solution took a long time to hit me:

- a) Scratch the toroid with a tile cutter or glass cutter on the diameter



- b) Tap it on the core with a wee sharp cold chisel and hammer and it splits open neatly into two halves

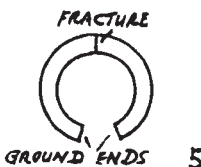
Now take the halves to a hand grindstone [or I suppose any machine buff] You will find that two of the broken ends can be ground down with 'neither'.

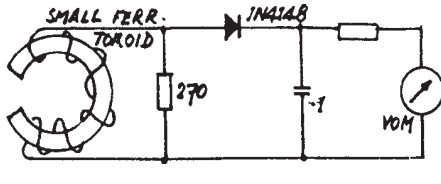


They now fit together as shown.

The fracture is now cemented with a tiny drop of super glue [cyanoacrylate glue]

The glue line does not affect the magnetic properties of the toroid





So Ken's useful device becomes as shown:

It will let you test an ATU for best current in the aerial and allow to mess about outside checking for balanced currents on feeders and currents loops in the right place on an aerial

Put the toroid into a piece of perspex tubing [or similar] and add checks of Formica thus:

This means that the wire is always in the centre of the core and gives constant coupling for accurate comparisons - useful in tuning up an aerial.



FREQUENCY JUMPING AFFECTING MIZUHO QRP TRANSCEIVERS

Roy Kavanagh GM4VKI

With having two of these QRP T/Rs this fault has appeared on both of them. The fault manifests itself as frequency jumping when the front panel controls are altered, ie Vol. or Rit.

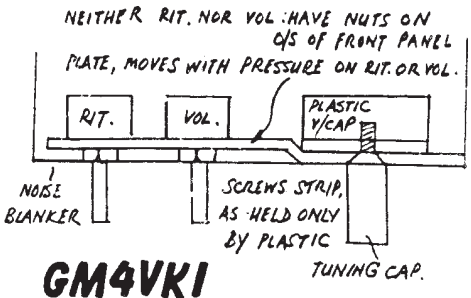
The trouble lies in the mechanical construction of the T/R front panel control support metalwork, as can be seen in the diagram the metal support is clamped between the front panel and the plastic tuning capacitors front plate, and is held in place by the two screws which clamp the plastic tuning capacitor to the front panel. As can be seen on the dia. any use of the Vol, or Rit. control puts pressure on the metal support plate and eventually pulls the holding screws out of the plastic threads in the tuning capacitor slipping the threads. This in turn loosens the metal plate and allows intermittent earth connection of the controls and mechanical instability about the VXO wiring.

As when the screws have been stripped there is no way of rectifying the problem other than replacing the capacitor and starting again with the same eventual problem, there is a very simple precaution and cure for the trouble.

The Rit. control on both of mine has its clamping thread extending through the front panel and flush with the front of the escutcheon plate, but without any nut on it.

It is a simple matter to remove the front escutcheon plate by removing the control knobs and socket nuts ie. SPKR/Mic/Key and the front escutcheon comes away.

Find a suitable nut to fit the holding thread of the Rit control and fit on the outside of the front metalwork. This when tightened makes a good solid support for the rear support metalwork and takes the strain from the screws holding the tuning capacitor. The hole for the Rit control in the escutcheon will have to be enlarged slightly but that is a small job with a round file. Refit the front escutcheon in the reverse order from removal and the job is complete.



GM4VKI

A BETTER MINI DIPOLE T-PIECE A.W. McNeill G3FCK

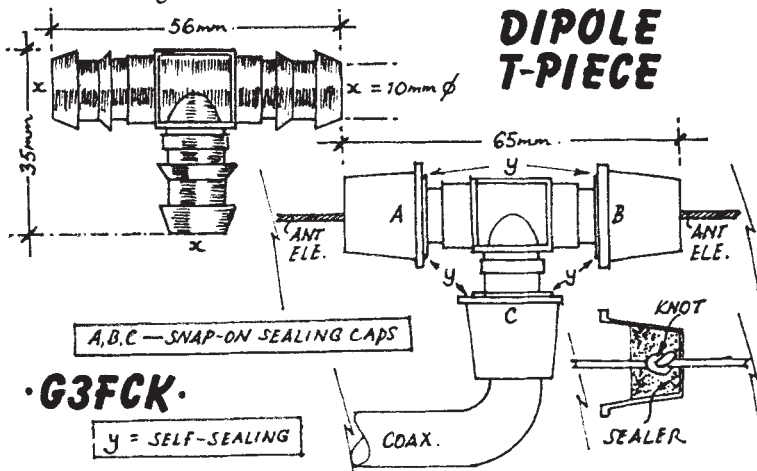
40 Turnpike Road, Newbury, Berks

Further to the SPRAT 64 article on small T-Pieces for dipoles, and the follow up in SPRAT 65 by G3DSV, this current 'find', [again from garden suppliers!] can accommodate coax downleads of up to 10mm diameter. It has the advantage of being very light, strongly-constructed and virtually self-sealing against moisture..

The units are sold in pairs, at approx £2, from 'B & Q' and similar DIY or garden suppliers. They are part of a micro-drip-system called 'Gardena' [1329-20] and made in Germany.

A small hole, just sufficient to admit the wires, is made at the centre of each sealing cap, fed down the centre piece, soldered to the coax inner/outer; insulated, wrapped in PVC tape and drawn back up. The end caps should be treated with a small quantity of suitable sealer. [SPRAT 65, p.26 q.v.] before snapping shut.

If using plastic covered, multistranded wire for the elements, a knot in each wire, near the end cap outlets, should prevent fractures in high wind conditions.



AN HW9 SELECTIVITY IMPROVEMENT Paul J. Levesque KB1MJ

14 Wesley Street, Dedham, MA. 02026. U.S.A.

Perhaps the most annoying fault in the Heath HW9 is its excessive 3kHz Bandwidth and the desensitizing of the receiver via agc driven by strong signals in the passband. [see filter mods. for the HW9 by Cam Hartford in the July 1988 edition of the ARCI QRP Quarterly].

I have been quite successful with the 400Hz 3 pole crystal filter suggested by Wes Hayward in the above article when driven with a high gain FET in order to simplify the required changes. I can now operate on 40 metres at night, a feat found impossible with the original design !

I have purchased a large quantity of crystals and have matched them very closely in sets of three in order to provide optimum filter performance. Three crystals and the two 680pF capacitors I have mounted to a small PC board creating a 'drop-in replacement' for the original heath filter FL301. A high gain FET from the J308 family provides a direct substitute for Q301 and increases IF gain. A small toroidal transformer establishes the impedance match between the FET and the input of the crystal filter.

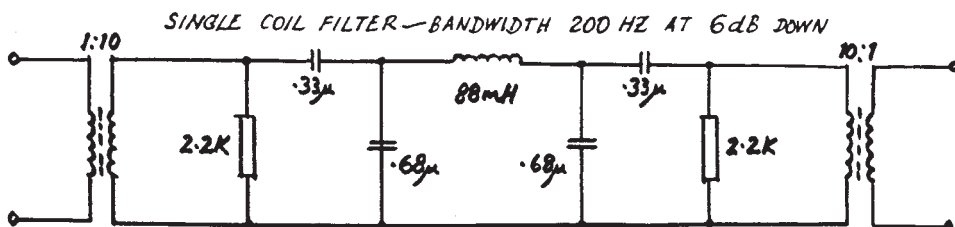
I can supply a complete parts kit with step by step instructions for HW9 owners who are interested. Keep in mind, however, that you will forfeit the ability to copy ssb signals with this modification. The cost is \$28.00. Over 40 kits are out there in QRP Land. Drop me a note for if you would like more information

RX POSTSELECTION FOR CW

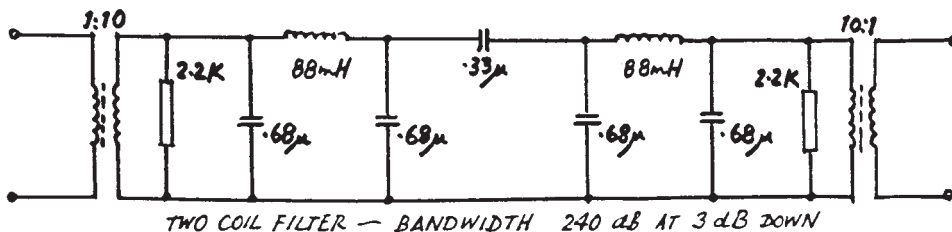
Ha-Jo Brandt DJ1ZB

It is quite common with modern receivers and transceivers that the quality of cw reception is not satisfactory, in spite of a narrow cw filter in the (1st) i.f. This is caused by a signal bandwidth being too wide behind this filter and especially in the a.f. section, which is designed for music reproduction. Therefore the cw signal may be accompanied by an annoying broadband noise as well as some distortion products.

It is a noticeable relief for the human ear if the unwanted audio is filtered out by a post selection in the headphone lead. Such a filter need not be as expensive as similar filters published earlier, which were designed to attain cw selectivity in ssb receivers. A passive filter with one or two of the popular 88 mH toroids will be sufficient.



Two solutions are offered, both designed for a centre frequency of 800 Hz. With one coil, the filter response is rounded; at least two coils are needed to get the desired flat top response. The internal filter impedance is 600 Ohms, therefore suitable transformers are needed to match them to the low impedance of headphones and a.f. receiver outputs. The external speaker output is to be preferred, because the front panel headphone jacks often contain internal series resistors.



As usual, a DPDT switch may be employed for by-passing the filter, with a simple series resistor to match the a.f. volume.

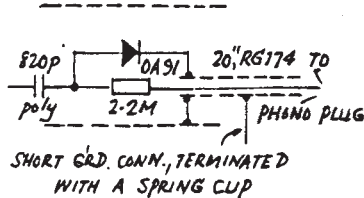
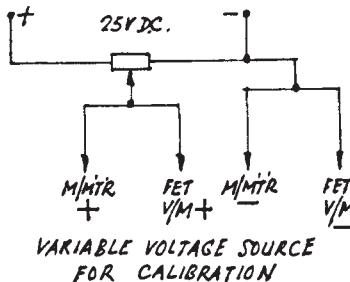
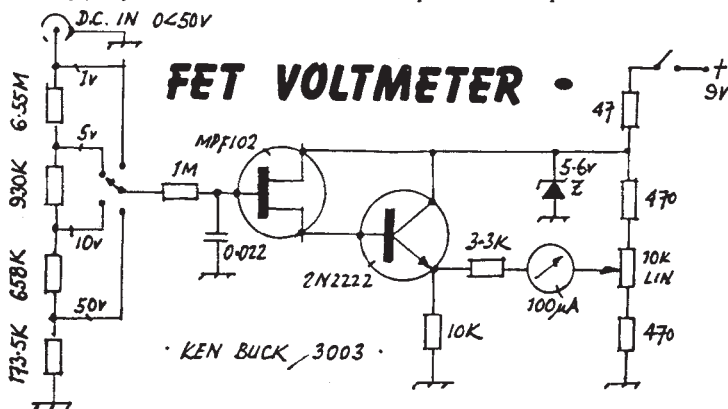
TWO TIPS FROM JIM: Jim Harrison 5757

- 1) A dab of grease or vasoline on the tip of a screwdriver will help hold a screw in position, even upside-down. [I use Blutack - G3RJV]
- 2) For table top construction a wooden board with a piece of beading pinned round is most useful in that components do not roll onto the floor!

TWO BAND TRANSCEIVER UZ3ZK [SPRAT 70] ERRATUM

The capacitor C8 should be connected simultaneously with resistor R7. The upper end of inductor L5 should be connected to + 12v. On the figure on Page 15 the inductor L3 should be marked as L5.

An economy transistor version of a valve voltmeter (VTVM). The 100uA Meter is connected across a resistance bridge. The potentiometer is a panel mount component to keep the meter at zero before measurements. Variable voltage input at TR1 gate results in a proportional variation at TR2 emitter. The 100uA meter is driven from its own voltage source in an isolation circuit resulting in virtually no current being drawn at the input terminals. Input resistance is very high about 10 Megohms. When calculating the values for the input resistive attenuator network, include a preset with a generous tolerance to allow for gain spread of TR1 + TR2. The 6.55 Megohms resistor can be a 2.2Megs preset in series with 4.7Megs fixed. A 220K preset is Ok for the 173.5K resistor. Transistor substitution is not recommended as calibration may not be achieved. 2% resistors were used throughout but 5% may be suitable. Before soldering in the finalised network values, adjust each preset to the value shown within each range. Calibration will then be approximate. Before calibrating the meter, allow several minutes to pass after switch on for the semiconductors to thermally stabilize. During calibration occasionally disconnect any input voltage and check that the 100 uA meter needle is at zero. A multivolt pot was used at the calibration source (10K used but other values OK). An alternative is an epicyclic slow motion drive coupled to an ordinary LIN potentiometer. Repeat the preset adjustments for best accuracy and it is most likely that some compromise settings will have to be reached. An RF Probe is necessary for the meter to be used as a peak reading detector up to the TX driver stage. The components and probe were soldered to a 3mm wide piece of glass fibre laminate with isolated copper pads keep all leads short. It was then sealed inside a section of scrap telescopic aerial and the outside insulated with heatshrink sleeving. AC calibration is not so easy as a study of the handbooks will reveal. Individual diode characteristics (linearity curve) and the type of meter used are just two of the reasons. Each range would require its own additional resistance. This is no problem as TX RF stages can be simply adjusted for the maximum resonant peak. Probe input should be limited to about 30v pk-pk.



R.F. PROBE

G3ROO's CONSTRUCTION COLUMN

Ian Keyser G3ROO, Rosemount, Church Whitfield, Dover, Kent. [0304-821588]

This time we are going to cover the diode switched RF board outlined in SPRAT70. This board is designed to be used in the Kitten II, but I have included a transmit mixer so as to make the board more versatile. With this mixer it makes the MLX board extremely versatile as an all band transceiver can be constructed with the minimum of fuss. the boards required are:-

RF board, Synth, VFO, multi channel Xtal osc board (or FT101 het board spare) MLX board, Cirkit PA, and a low pass filter board and a suitable box to put them all in! At a guess the cost, with careful buying, should come out at about the £250 and this cost will be spread over the construction period. That will give you a very respectable little rig that you know from top to bottom and not be scared to poke fingers into !

The DIODE SWITCHED R.F. BOARD

The aerial input is switched into the board via a diode switch that selects the aerial on receive or on transmit the output of the Tx generator board or the onboard Tx mixer.

The input signal whether it be the aerial or Tx signal is first filtered in a bandpass filter which is diode selected for the band in use, it is then amplified in the RF amplifier stage, however there is the ability on receive to switch off this stage and by-pass the signal directly to the receiver mixer. On the LF bands and during good conditions on the HF bands the RF amplifier is not required and only serves to degrade the large signal handling ability of the mixer.

The mixers used on both receive and transmit are SL6440 devices from Plessey. These devices are capable of performing almost as well as the MD108 but have the distinct advantage of low local oscillator drive level requirements. The level of this drive is about 300mV P/P across 1K.

The output of the on board Tx mixer is fed in parallel with the input from the external Tx mixer input pin so the same control procedure is used whichever is used. The output of the Rx mixer is fed directly to the I.F. output pin on the edge of the board. and has an output impedance of about 1K.

There is a pin on the board marked Rx+12v, this pin is an unstabilized output and can supply a few tens of milliamps if such a voltage is required elsewhere in your design.

Band selection is accomplished by supplying +12 volts to the correct select pin for the band required. The RF amplifier is turned on by earthing the 'RF AMP ON' pin. The board is put into the Tx mode by applying Tx+12v to the pin so marked.

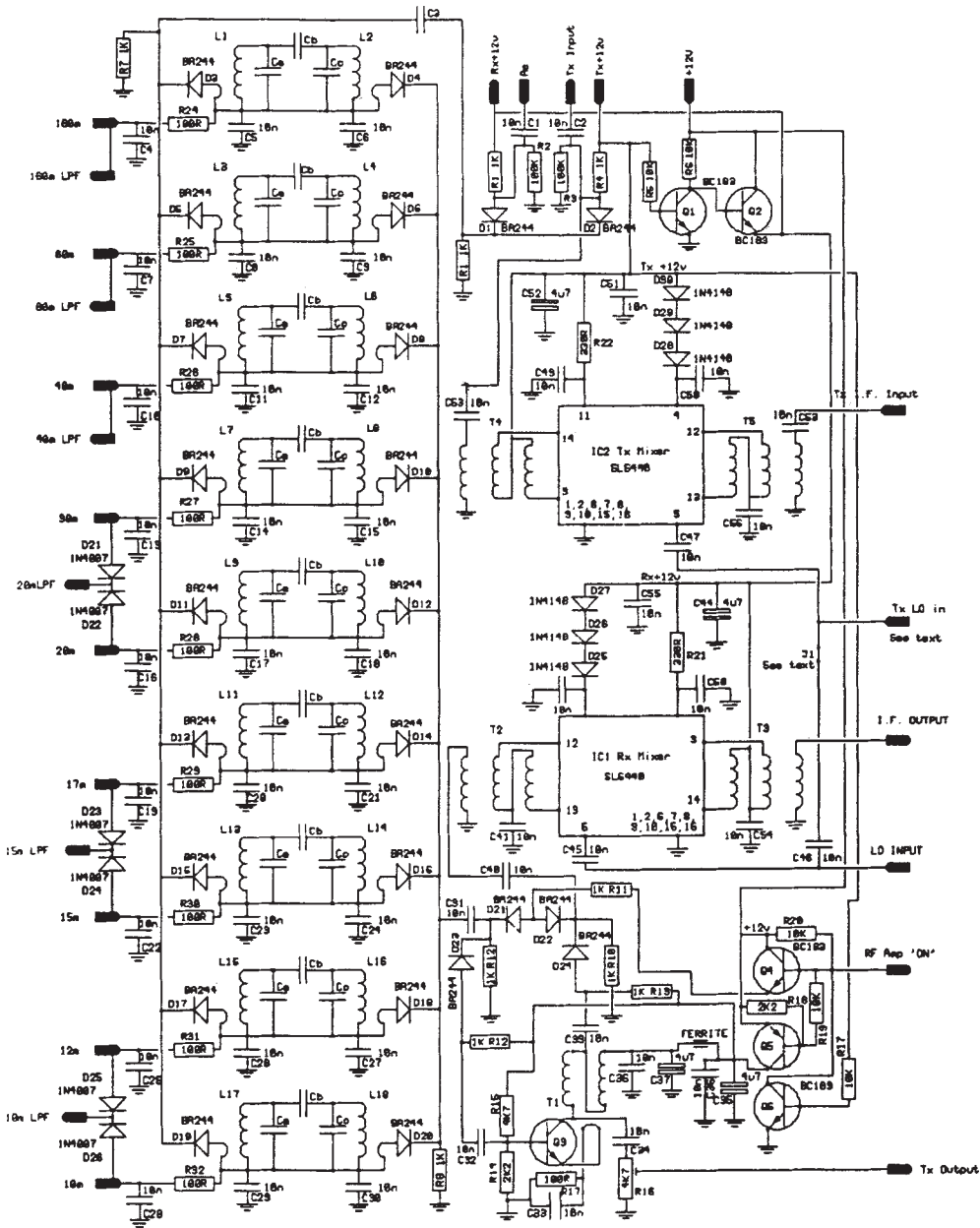
The component values for the input tuned filters are the same as the table on page 30 of SPRAT 64

Erratum for Sprat 70: The varicap was not quoted, I have used several different 40pf diodes but have used the BB204. The KV1320 should also be suitable.

G3ROO's SHACK CLEARANCE : Contact the QTH Above

This is fantastic, I have now got TWO spectrum analyzers and some room, but have realised just how much I still have on the shelves! Cash in B.Soc account means more building so

FT102 (have two but only need one!) Super tranceiver VERY G.C. £600 ono. **FRG7000** Even better than the Froggie 7 £225. **FL2100B Linear...** 600watts but rarely used! (have to say that with George around!) £350



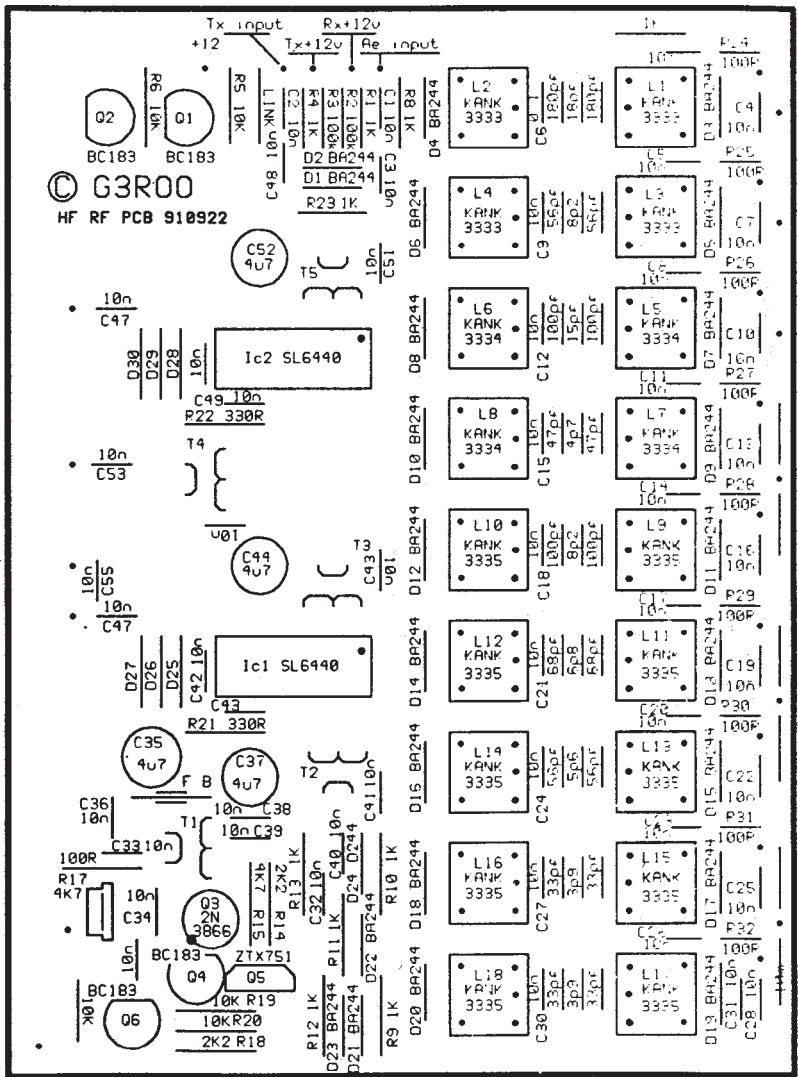
5.3 inches

Tx out

LO

Rx IF

Tx LO if diff to Rx



160m

160m LPF

80m

50m LPF

40m

40m LPF

30m

20m LPF

20m

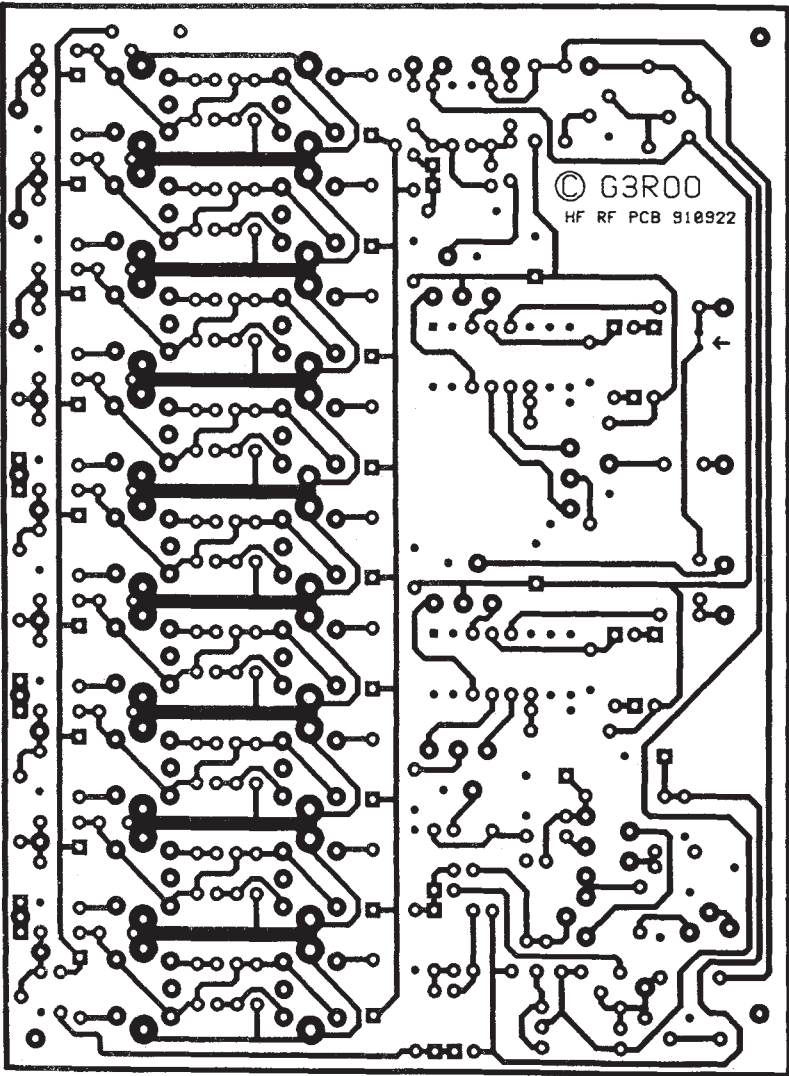
17m

15m LPF

15m

10m

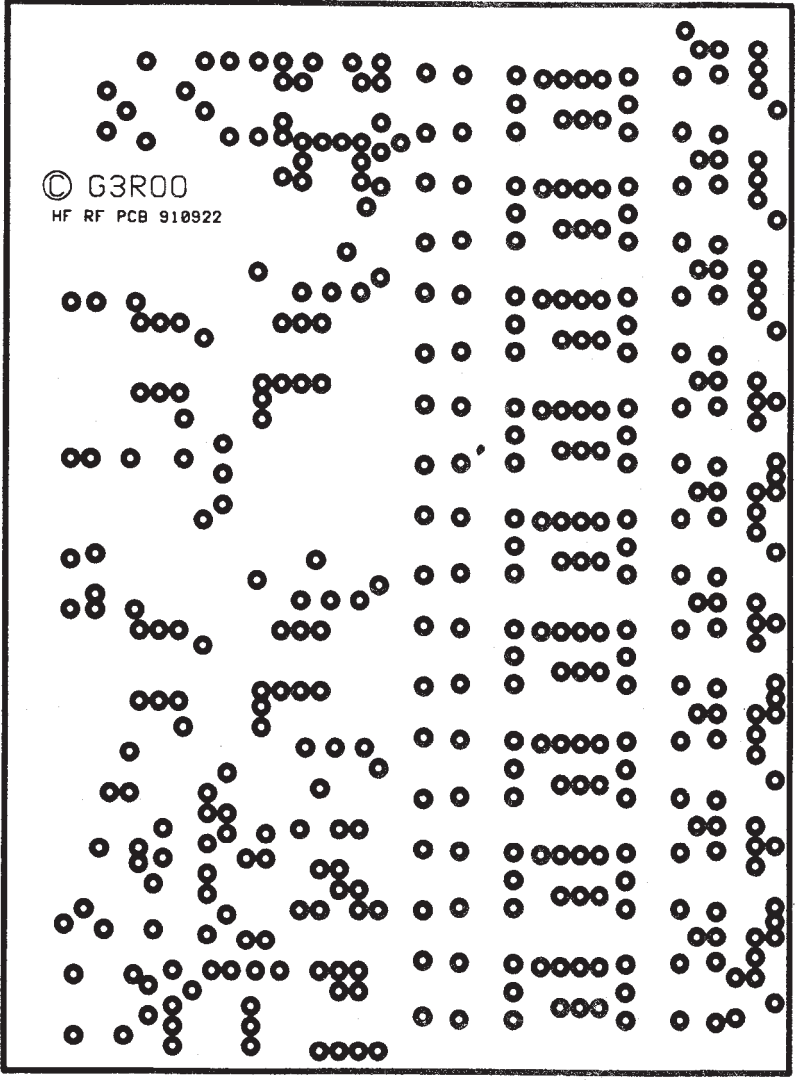
10m LPF



5 3 inches

5.3 inches

© G3R00
HF RF PCB 910922



ADS-ADS

WANTED : MIZUHO 'MX' QRP SSB/CW RIG, 20,40 or 80m. please telephone Nigel on 081-949-2317

WANTED : TEN TEC. Internal VFO module and any boards, crystals, and any other bits and pieces from any Ten Tec Transceiver in any condition. Bill Wright, G0FAH, QTHR or 081-693-9149.

WANTED : SWEDISH members of the club help me obtain a semi-automatic key with the designation : SVENSKA RADIOAKTIEBOLAGET Stockholme, TYP BUG 140. I am also interested in the Growth of the telegraph in Sweden. Do SM members know of articles on the subject in English. All Expenses Paid. Colin Waters, G3TSS, 1 Chantry Estate, Corbridge, Northumberland, NE45 5JH.

FOR SALE : HW9, WARC Bands, Mint, Unmodified, £200 ono, FT290R II, Nicads, Charger, Case, £310, Palm Four 70cm Hand-held, 1w, Nicads, charger, Toneburst £55, Unbuilt Kits: Howes CVF20 VFO £6.50, ST2 Sidetone, £5, AA4 Active Antenna £10. Spectrum PT1000 Piptione £2.50. **WANTED** : Cheap but working 2m Mobile, IC240, TR3200 etc or w.h.y. Mark Palmer G0OIW, QTHR. Reading 0734-483593.

FOR SALE : RACAL RA17 RECEIVER complete with Desk Top Cabinet, Circuit. £85. QRO PSU 1000v 250mA, 300v 20mA, -40v 1mA, 28v 300mA, 13v 30mA, 8v 100mA, 24v 4A, 12v 700mA. £10. Three DYMAR 880 Series VHF FM Receivers £15. Mike Osborne, GM3YGM, 0475-522062.

FOR SALE : Surplus to requirements, CW Transceivers: HW8, HB9IK RIT Fitted, £110. MIZUHO DC7X 2w on 40m, revamped VFO and frontend Filter, £90. Alex, GM4IAO, Tel: 0835-62015

FOR SALE: 40m Xtals 7030, 7025 £2 each, 2m Rubber Duck TNC suit Dymar 880 Conversion £4, 5 way SO239 HF Antenna Switch £5, Built ONER board + info £3, RX Board for 40m (H.Brew) + info £3. Dave Cooper, G0KYR, 0670-712514.

CAN ANY SUPPLY Circuit/Article/Book reference to enable me to build an analogue to digital interface for reception of FAX broadcasts to feed IMB Computer. Tony, G3HNP, 0493 - 393560.

EXCHANGE : Russian Currency [roubles] Ukrain currency [cupons], Soviet Stamps for any literature and magazines for hams [in English]. Igor Grigorow, Box 68, 308015 Belgorod-15, Russia.

FREE TO GOOD HOME: but YOU must collect: Creed 7B Teleprinter, 45.5 baud, 24v DC, Tektronics 545A dual beam Oscilloscope. G4RMC, QTHR, Watford 0923-679567.

TRADE : Unmodified HW8 for 123 Set, Also want 128 Set and an 'A Mk.III' Set. Also any military Pack or Ground Radios. and circuits or schematics related to Spy Sets. 'Mike' Michaels, W3TS, POB 593, Church Lane, Halifax, PA 17032-0593, U.S.A.

FOR SALE : White Rose project: Main Receiver + 40m Converter + case, needs 3 gang cap, alignment and connections to complete. £40 ono. TETRONIX [Telequipment] D50 Oscilloscope, with stand, valves and handbook. Bit tatty but seems to work £56 ono. Old Broadcast Bands Receiver, 1w/mw/sw inc 7,10,14MHZ + BFO. £5. Call David 081-313-9955

FOR SALE: TEN TEC CENTURY 22, As New, Hardly Used, All Options : Keyer, Calibrator, Magnetic Switch. Plus PSU. £250. Buyer Collects. Bill Trenchard, Bridgewater 0273-455923

D
A
Y
T
O
N
9
2



TOP: The G QRP Club Booth with G3RJV, G4WZV, G0BPS, G4LOF, N8ET, G3PDL and GW3RJY



LEFT: QRP ARCI President, Paula Franke, WB9TBU presents G3RJV with his Honor Roll certificate.

BELOW: G3RJV enrolls G QRP Club member 7000 : Terry Barnes, G13USS, President of the RSGB.



LOW POWER COMMUNICATIONS By Richard Arland K7YHA

Volume 1 - QRP Basics

In the early 1980's a frequent caller at my shack was Rich Arland, then G5CSU. In fact under the influence of Rich our family obtained a dog and a camper van, both of which brought mixed blessings to our household. Since that time, Rich has returned to the United States, become K7YHA, and now writes the QRP Column for WORLD RADIO magazine.

Rich has just produced his first book on QRP called LOW POWER COMMUNICATIONS : VOLUME 1 - QRP BASICS. Published by Tiare Publications, the book is 100 pages of sound advice for the would-be QRP operator. The author describes it as a "QRP primer" which contains his statement about low power communications. This "statement" is born of 25 years experience.

Perhaps the best way to sum up the book is to take a paragraph from the introduction. "Low power communication just doesn't happen. Successful QRP contacts are the product of intelligence, the proper "mind set", training, developed skills, planning and goal setting..... In this book you will learn operating techniques that will enhance your chances of getting into the other guy's log book, propagation theory, short and long term goal planning, how to organise your low power operating efforts and much more."

The book contains sections on QRP History, The QRP Mindset, Getting Started, QRP Antennas, Basic Operating, Advanced Operating, Contesting, Milliwatting, Digital Operations, Solar Power, Getting Organised, Computers and QRP Organisations. Quite a body of material. As the back cover says, "Here's the lowdown on low power operating from one of the experts".

What do I think of the book? The simple answer is that I wish I had a copy years ago when I began to venture on the bands with low power signals. It could have saved me a lot of time, frustration and foolish mistakes. It contains a lot of information in a condensed form and, as one might expect, much of the operating advice offered for the QRP operator would also help any operator, at conventional power levels. There is also a lot of sound advice for the Novice operator on the HF bands. The book is obviously written for the American market and many of the products and details mentioned are American, but the advice, and many of the items described, are accessible to the UK reader.

So far there are no major stockists of the book in the UK, but the G QRP Club have bought in a stock for UK QRP Operators. The book can be obtained from Dave Aizlewood, G4WZV, 36 King Street, Winterton, Scunthorpe, DN15 9TP for £6.50 plus £1 postage. Cheques made out to "G QRP CLUB" and please send an address sticker as G4WZV is not a mail order company but simply a radio amateur trying to help other radio amateurs. G3RJV

THE U QRP CLUB : Applications for the U QRP Club are open to all who send their Name, Call and Address plus 15 IRCs or \$8[US] to the President : Sergej Picurichkin, P.O. Box 100, Saransk-31, Russia, 430031.

TAKE CARE ! In a short item in SPRAT 70, G4FQQ described how to use a vacuum cleaner as a desoldering device. G3OUC writes to say that many vacuum cleaners rely on air flow through the motor for cooling and there is a serious risk over overheating the motor.

QTI IS A TAPE MAGAZINE

For Visually Handicapped Radio Enthusiasts Offering Recording of Radio Magazines Inc. SPRAT

QTI is sent out every three weeks, post free to blind or partially sighted persons

QTI is a Registered Charity run by volunteers AND NEEDS FUNDS

CAN YOU SPONSOR A WHITE STICK OPERATOR ?

QTI TALKING NEWSPAPER ASSOCIATION, 7 ANDERSON CLOSE, LANCASTER, LA1 3JE

G QRP CLUB

MINI-CONVENTION 1992

The Northern Gathering of the G QRP Club

SATURDAY OCTOBER 17th 10am - 5pm

St. Aidan's Church Hall, Manchester Road, Rochdale, Lancashire

Admission £1 : Doors Open at 10am : Talk-in on S22 from 9am

All the Usual Attractions : Large Social Area: Lecture Programme

Bring/Buy/Swap: Surplus/Component/Kit Sales: Equipment Display

Food and Drink available All Day inc. the 'Famous Pie & Peas'

FULL DETAILS AND MAP IN THE NEXT ISSUE OF SPRAT

LOCAL ACCOMMODATION: Tudor House [Good B&B] Mrs. Traynor 0706-861103

Midway Hotel 0706-32881, Norton Grange Hotel 0706-30788

OOPHS..... 80 metre Phasing Receiver Erratum: The erratum in the last issue [70] was incorrect in that the sideband select switch was correct in the original circuit.

NICKY'S TRF PCB: [SPRAT 70] contained some errors. The 0.01 decoupling capacitor should be added to the reaction control slider and the 1K load to the audio output. The capacitor to the right of the two large electrolytics should be 100uF [audio output]. Both of these could be added off the board. Kanga now do a kit of the TRF with these corrections - see back page.

FREE QRP TRANSCEIVER DRAW

At the Leicester ARS Show, October 23/24

A NEW MFJ-9020 20 METRE CW TRANSCEIVER

KINDLY DONATED TO THE CLUB BY WATERS AND STANTON

Members are invited to take their QSL Card [with Club Number marked] to the Waters and Stanton Stand for a Free Draw at the End of the Show

QRP NEWS FROM WATERS AND STANTON

The MIZUHO 'MX' CW/SSB HANDHELD QRP TRANSCEIVERS

are once again available in a range of single bands

The MFJ-9020 20 Meter CW TRANSCEIVER [4W. Superhet]

is now available from stock. Further Information from Waters & Stanton

WATERS & STANTON

Retail and Mail Order: 22 Main Road, Hockley, Essex SS5 4QS. Tel: (0702) 206835/204965

Retail only: 12 North Street, Hornchurch, Essex. Tel: (04024) 44765

AN EXCITING NEW BOOK THE G QRP CLUB ANTENNA HANDBOOK

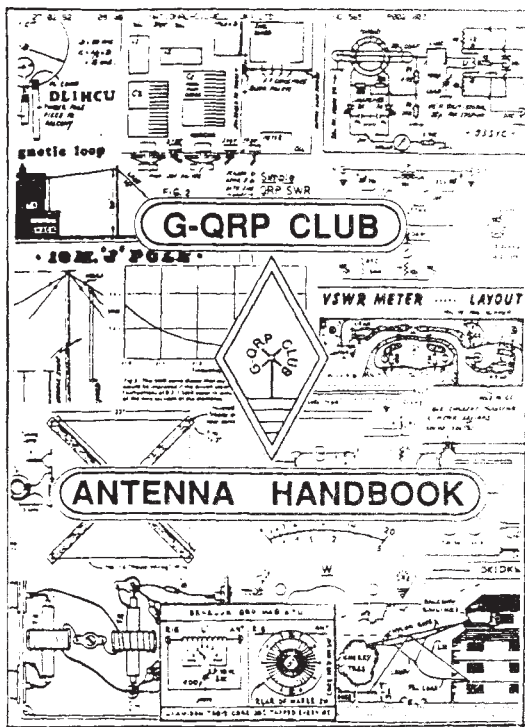
Edited By Peter Linsley G3PDL
Published By The G QRP Club

Antennas, Tuners, Accessories Etc. 160 pp.
The Complete Collection from SPRAT
From Issue 1 to the End of 1991

Special Members Price £4.50 + £1.43 Post
Non-Members £5.00 + £1.43 Post
Europe £4.40 + 2.24p, US/DX \$14 (Surface)

Order Your Copy From:

Shoreham Copy Centre, 3 John Street,
Shoreham-by-Sea, Sussex, BN4 5DL
Cheques to "G QRP Club"



OVERSEAS SALES : The book is available in France, Germany, Holland and the U.S.A. The price depends upon local postage and the initial cost to ship the books. Please check with the local representative :

FRANCE: Paul P. Bei, FB1MQO, 14 Avenue de Rodez, 81 400 Carmaux. France

HOLLAND: Peter Halpin, PE1MHO, Ch.Kohlerst.69, 7558 VB Hengelo. Tel: 074 771832

GERMANY: Rudi Deil, DK4UH, Weinbietsr.10, W6737 Bohl-Iggelhiem. Tel: 06324 64116

USA: Luke Dodds, WSHKA, 2852 Oak Forest, Grapevine, TX 76051. Tel: 817 481 3805

or Kanga US, N8ET, 3521 Spring Lake Drive. Findley, OH 45840. Tel: 419 423 5643

G3WGV TURBO LOG PROGRAM

The club has been approached by G3WGV to do a G QRP Club version of his popular TURBO LOG, which would include a club database. This will contain only the information published in the members handbook [callsign, number, forename] and will be available to members ONLY. Under our data protection licence, we must ask if any member objects to this information being included. The finished result should produce a useful logging aid and database for any club member with a PC Computer.

*Morsum
Magnificat*

Of interest to all CW operators, veteran or novice, this unique quarterly magazine provides an invaluable source of interest, reference and record relating to the traditions and practice of Morse.

Available only by postal subscription, sample copy £2.20, or send for further details to

Morsum Magnificat, 9 Wetherby Close, Broadstone, Dorset BH18 8JB. Tel: 0202 658474

WINTER SPORTS 1991 Final Report

Firstly, may we thank the dozens of members who sent logs. The response to the 1991 event was quite overwhelming, and everyone seems to have enjoyed themselves. Your logs are greatly appreciated. After some difficult judging the Awards are as follows. The G4DQP Trophy goes to Mike, W3TS, who was not far short of 100 trans-Atlantic two-way QRP contacts, and also got across to Europe on 8 bands. Well done Mike! Runner-up to Jack, NG1G, with 53 two-way trans-Atlantic contacts. He was another who made it across on 3.5 MHz. The European leader is Peter, DJ0GD, who amongst other good stuff managed to find VK and 9J2 on two-way QRP. An award for the best QRP log goes to OK1DZD whose 900 mW gave him contacts with QRP stations in 12 countries and 3 continents! The Sportsman Award goes to Randy, AA2U, who submitted an enormous log but asked for it to be treated as a check log. Nice gesture Randy! The Difficult Locations award goes to G3KCJ, who had a go despite being limited to a random length of wire, 7 ft high, tacked around the walls of his bungalow. This shows the true QRP spirit. The award for the best log submitted by an FOC member goes to G3LHJ. We know other FOC members such as VK6LW and EA6ZY were active, but no logs were submitted. Finally, having submitted a log about the size of the Domsday Book, our very own Chris disguised as GBOQRP, receives a special "I was a QSL Manager's Nightmare" award for the 645 contacts he made using that call. Thanks again to everyone. It was a great event. STOP PRESS: We were surprised not to have had a log from Serge, RA9CEI, who did such a good job in the Sports. Eventually it did turn up having taken several weeks to get here by air (hot air balloon??). Serge made 42 QSOs with 11 countries, despite having to work on most days, and he receives a special award for putting Siberia on the QRP map. Eighty metre buffs please note that the UK early morning period is mid-morning in Siberia, so next year Serge hopes to be looking for you around 35060 at 0.-0200 GMT. A change of a nice one!

OUR MAJOR TROPHY AWARDS FOR 1992 are as follows. The G2NJ Trophy is awarded to our Treasurer, Peter, G3PDL, for outstanding services to international QRP in the shape of his excellent administration of our funds. Well done Peter! The Partridge Trophy goes to Ben, SM6YF, for long term development work on small loop transmitting antennas both on shore and aboard ship, his 7 MHz loop in SPRAT 66 being one example. The Suffolk Trophy goes to Ian, GM3RXU, for his excellent article "DX RX = Double Conversion RX" in SPRAT 67. The Chelmsley Trophy goes to Mike, G0IFK, for a 1991 log showing over 900 contacts with 136 DXCC countries using a simple inverted G5RV antenna. Henry, Y26SW was second with 120 DXCC worked. A special certificate goes to Mike, G0OAA, who worked 61 countries, 20 of them on two-way QRP, and five continents, on 7 MHz, using a simple dipole sloping from 30ft to 8 ft. (The Winter Sports Awards appear elsewhere in this issue.) Very sadly an excellent Chelmsley log from HB9XY had to be rejected as it arrived well after the closing date. Bad luck Hans.

THE OK/G WEEKEND produced a lot of activity and was enjoyed by many members. Unfortunately, after lurking in the background for many months, Murphy suddenly struck! During the typing of the Rules for SPRAT some vital words were lost. There should have been a line reading "1000 - 1700 GMT 14/21/28 MHz", but this was lost somewhere in typing and the error not noticed until a couple of days before the event. We apologise, but with the pressure under which our volunteer typists work to produce SPRAT the occasional error is inevitable. Many members used the hf bands anyway, and found plenty of OKs, and we will see that those who only used 1f do not suffer when awards are made. There may be rule changes next year to extend the scope of this event. A fuller report will appear in our next issue.

WE HAVE HAD SOME WONDERFUL MONTHS ON 14 MHz RECENTLY in Europe, with hardly a time when one could not work other European QRP stations. This highlights the steady increase in interest in this fascinating and environmentally friendly aspect of our hobby. One outstanding signal has been that of Bea, SM6YF, with his small magnetic loop, which has also been producing DX from as far away as VK. A big increase in activity amongst our French QRP friends has also been noted. Bravo mes amis!

THE SUN IS BELIEVED TO BE 46 MILLION YEARS OLD. Serious sunspot observations have only been going on for a little under 250 years. This means that our observed sample is only a minute fraction of overall solar activity. On what we know at the moment we can say that at the present time peaks in solar activity take place at approximately 11 year intervals, and that peak activity varies considerably. What we do not know is whether these peaks are small variations on a much longer cycle, lasting hundreds or even thousands of years, or what level of sunspot activity would occur at the peak of such a long cycle. As the sunspot count reached zero for the whole of the year 1810, that year MIGHT have been the trough of a much longer cycle. So at some time in the future we or our descendants may see solar activity climbing to unheard of levels, and the MUF reaching 100 or even 150 MHz. If that day ever comes it may provide fun for those working across the Atlantic with 2m handhelds, but it will also provide massive headaches for all sorts of commercial and broadcast services using what we now consider line-of-sight VHF frequencies! If this happens, at least you can tell them it was all forecasted in SPRAT!

BREAKTHROUGH FROM HF BC STATIONS is often a problem with dc receivers. Fitting a simple antenna input attenuator is usually of some help but often not a complete cure. A quite different method of reducing interference from out of band signals has recently proved successful at G8PG. It involves replacing the conventional antenna coupling coils on the antenna tuning unit with coils wound from small-bore coax, the braid of which is connected so as to form a Faraday screen. What one does is to replace the existing winding with an equivalent winding made from small bore coax. At the "hot" end of the coil the antenna is connected to the inner of the coax. At the earthy end, the coax inner is connected back to the screen of the coax at a point adjacent to the beginning of the winding, and this point is then grounded. Note that the earthy end of the winding there is no connection to the screen on the coax cable. A single turn winding of this type is illustrated in 17.10 of the RSGB "Radio Communication Handbook". Modifying a Z-match in this way produced (a) very much sharper tuning when loading the antenna and (b) reductions of up to 9 S-points in out of band signals. As a bonus, this form of coupling also considerably attenuates any harmonics at the transmitter output. The coax I used was, I think, designed for af, but it works with no noticeable losses.

OUR MOST PRESTIGIOUS OPERATING AWARD, The QRP Master Award, has now been issued to just over 50 members, representing 14 countries and three continents. Allowing for SKs and those who may have dropped out of amateur radio, this means that about one in every hundred members is a QRP Master, which is pretty well the ration the award was designed for. Not easy to qualify for from Europe, this award is even more difficult for DX QRP operators, so one must mention KH6CP and WN2V, the two DX holders of the Award., whose work is really outstanding. Also the first G0 to qualify - GM0DHD - who achieved the required contacts in about 30 months. In this he was following in the local tradition, QRP Master No 1 (inevitably) being GM3 OXX. Rules for the Award appear in your Members Handbook. Worth looking at if you want a real challenge.

ARE SOME OF OUR MEMBERS ASHAMED OF BEING QRP OPERATORS? When checking cards submitted for awards I sometimes think so. Firstly, there are those who are so ashamed that they do not even dare to put their power on the card at all. Then there are those who try to hide it, by putting it on some obscure part of the card, using figures that require an electron microscope! If you are not ashamed to be a QRP op, put your power boldly and clearly on your card and show you are proud of your QRP skill!

AWARD NEWS

QRP MASTER. Congratulations to new Master GM0DHD

QRP WAC. NJ3D, PE1MHO (50 MHz), G14MBO, G3GVY.

QRP Countries. 150 G0IFK (Well done!);

75 GM0DHD; 25 NJ3D, G000A, OK4KAR.

WORKED G QRP CLUB. 500 G8PG, G2DAN; 400 G3DNF (not G3DNG);

380 GM3RKO, G0IFK, ON4KAR, 340; G3MBN, 300 G4XVE, G3INZ;

260 G3LHJ, G3FCK; 240 G4WZV; 200 G4NBI; 180 G0NEZ;

140 G4JZO, LZ1SM, G0KCA, GM0DHD; 100 G4WUS, G4UNL;

80 Y24TG, G4VGS, G3YXK; 60 GM4EWM, G3MJX, SM6YF, G00AA;

40 G3SOX; 20 G4GBS, G10PCU.

TWO WAY QRP. 60 (!!) GM3OXX; 40 GM4UYE; 30 ON4KAR, G14DQO, G3LHJ, G4WUS, GM0DHD.

20 G4WZV, SM6YF; 10 G0KRT, NJ3D, G00AA, FB1LDX.

Hearty congratulations to all the above.

RSGB CONTEST NEWS

Peter Linsley G3PDL

The RSGB HF Contests committee are keen to involve us in their contests - a good thing too as we don't organise any contests of the usual type ourselves. Don't misunderstand me, the Winter Sports is competitive, must be a unique event (thanks to Gus, G8PG) and welcomes both the serious and casual participant. If you like swapping numbers as much as I do (I confess to being an addict!), and you would like to test your skills and equipment on other occasions too, you will be interested in the latest RSGB initiatives.

The first major change owes much to campaigning by Chris, G4BUE. The National Field Day Contest now has a QRP section. There are not too many entries as I write, and it will be over by the time you read this, but hopefully it will be popular in future.

You may feel intimidated by all the QRO signals in most contests - some very QRO - and feel that there is no point in joining in. There is a proposal that in future RSGB contest listings will carry a code indicating power level and antenna type. The power levels will roughly correspond with one 'S' point increases. Two of the categories will suit both QRP and QRPP operators. They will probably be at 1W and 5W but more about that when it has been finalised. This means that we can compare results with similar stations - how does my present doublet stack up with 5W? It vastly increases the options if you are keen on contests and gives an opportunity to check out equipment.

Finally, don't forget the RSGB Low Power CW Field Day Contest on July 19th from 0900 to 1200 and 1300 to 1600 GMT (a civilised contest with time for lunch and a sip of your favourite brew). There are two sections; (A) 10W RF maximum and (B) 3W RF maximum. Frequencies must be in the range 3510 - 3560 and 7010 - 7040 KHz. All QSOs count for points at 15 points for QRP portable, 10 for QRP fixed and 5 points for all others. QRP = less than 10W for scoring purposes. Exchange RST, serial No from 001, county code (in the UK) and power. Power is expressed as two digits with W as the decimal point, i.e. 3W5 = 3.5W and 0W3 = 300mW. Only portable power sources of course and a antennas no higher than 35ft (10.66m) with no more than 2 elevated supports. PAs must not be capable of more than 15W output maximum. Full rules are in May 1992 RadCom. Two trophies and several certificates are up for grabs including one for the fixed station handing out the most points. See you there?

WE REGRET TO ANNOUNCE:

The death of John, G4ECI, member 3083 on Easter Saturday. After a long fight against cancer, he faced his death with great courage and calmness and will be missed by his friends at Stockport Radio Society.

The death after a heart attack, of Rex, GOREX, member 5690, aged 54. Rex was the immediate past President of the Amateur Radio Club of Nottingham.

NOVICE NEWS

DAVID GOSLING G0NEZ 31 Semphill, Hemel Hempstead Herts HP3 9PF

Welcome to another Novice Operators Column - I hope you are getting some useful stuff and if you would like to write into the above address your comments, criticisms etc would be welcome. Lots to get on with - so I won't hang about.....

NOVICE ACTIVITY

My thanks to those who have taken time out to write in if you are a G QRP Club Novice Member, please let me know how you are getting on - let me know of any difficulties etc. I can represent your complaints (if you have any) to RSGB etc. Aerial problems can be sent in - but are probably best dealt with by our long term experts such as G8PG/G3PDL/etc.

Many Novice QSO's are now taking place on HF CW and VHF 'phone. Bob - G4FTO reports a good contact with Martin 2EOABA (Oxford) Bob wrote me asking for Qth info on Martin - nowt here - but a letter to RALU was Qsp'd to 2EOABA by RALU resulting in success - so whoever you are at RALU - well done from G QRP C!! Next surprise came the following day when I called in on the ISWL SSB Net (run by our Member Dick Rugg G2BRR) and 2EOABA's Tutor (Tony G0LCB) came on and told me that Martin was his "Star CW Pupil" hi. Many ISWL Members call into the Tuesday evening SSB Net on 3.700 @ 19.00Z and many use QRP/SSB. Quite an event the other evening when "we all went QRP @ 10 Watts" and remarks like "well o.m. your RST is just the same as your 100 Watts Hi!!! Regrettably - 3.700 falls outside Novice Allocation - but you can listen.

Novice signals worked here in Hemel have been: 2E0ABI, 2W0AAI, 2E0AAB, 2E0AAP, 2E0AAU and 2E0AAU [the best so far - name Ian and G QRP 3113 ,power genuine 3W. Well done Ian and great succes to you, your long wire and ATU was doing a real fb job !

NEW KEY

Exciting news is that a NOVICE Glenn son of (Len) G0ETV (QRP Nr 3200) has produced a great and attractive straight brass pounder called the "LEM Key". Len ran a precision engineering company in Blackburn - Lancs - and suggested to Glenn that a less expensive Key could be made for Novices. Well, having tried it - and bought it - I can only give it the "thumbs up" (it should be reviewed in the next issue of SPRAT). For details send Glenn an SAE to : L.E.M. Keys "Springfield" Staynall Lane, Hambleton, Blackburn, Lancs. FY69DR

G4LQF SUCCESS

Everyone knows Norman G4LQF from his excellent G8PG Morse Tapes but now comes news that Norman has coached his son Julian thro' the NRAE (Novice RAE). Julian intends not to apply for a "B" Novice Call; but to pass the SWPM Morse Test and get onto HF and work some DX on the Key. Well done o.m. Julian and the other o.m. Norman our unsung Morse Cassette Tape hero.....

PENPALS WANTED FROM SP Land.....

Want a Pen-Pal in Poland? Piotr Ochwal (Call Sign SP9TNM) writes to ask for pen friends in the UK (or anywhere else I would guess?) Pete is an SP Novice and would like you to write to him as a Pen Friends with interest in transmitting/receiving at the address as follows; P.O.Box 41 PL41900 Bytom Poland. Pete is G QRP Club Nr 6226, O.K. QRP Club 099 and Listeners Group 236; Please write to Pete is you are interested he sounds like a nice guy.

G QRP CLUB ACCOUNTS AND RECORDS: The club is in the process of moving the accounts and membership records from BBC to IBM Computers and changing the software. The audited accounts will be published in the next issue of SPRAT. There may be a slight delay in dealing with membership recording.

MORSUM MAGNIFICAT FOR NOVICES

The fact is that power for power; CW carries much further than SSB/J3E so most G QRP Club Members use Morse Code/CW much more often than Phone. Morsum Magnificat is a Magazine/Organisation devoted to the use and promotion of Morse and is Edited by ex Practical Wireless Editor Geoff Arnold - a thoroughly nice Guy. Another fb chap is our own Tony Smith G4FAI who will send you a sample copy of the Magazine (known by its friends as "MM") Pse send an envelope size C5 (abt 9" by 7") plus a 1st Class Stamp. Its well worth it. Tony is very kindly giving the Novice Section of our Club mentions in both "Everyday Electronics" and "MM" so we thank you o.m. (Nice to work you recently too Tony and Mni Tnx fer NACC Mag, much help there.)

PUBLICITY AND INFORMATION

Our National Society (who everyone ought to belong to) have supported the Novice Section extensively by means of RSGB Novice Information Packs. I would like to thank Hilary Clayton-Smith and Sylvia Manco for sending me useful and colourful publicity brochures. My initial letter was to Hilary - but within days Hilary had encouraged Sylvia to send along packs of Novice leaflets. If you would like ONE Set, please send me an A4 Envelope - this applies to Novice only please, or potential Novice Instructors - who in any case - must be RSGB Registered.

Novice Operators - New to Amateur Radio - But not "New in Years"

It is quite apparent that the Society - although aiming their Project year (quite rightly at under 18's or so) have missed the boat on the older age bracket group. If you are considering taking up the Novice Licence and, shall we say, are not exactly a Teenager any longer, we are interested in you. Even at this fairly early stage it is quite apparent that not every Novice will be "Project Year" material. This Column is open to all ages 8 - 88 yrs and we are quite aware that many folk are facing early retirement etc; and we can offer you easy to build circuits/access to Kits etc that will enable you to get into any aspect of QRP Transmitting you may be interested in. You don't have to have acne and outgrowing your clothes to be a Novice hi! We are listening to you.....

A New Way of Learning Morse.....(?)

In a very recent letter - accompanying some Club Cassette Tapes - Norman G4LQF - sent me a very interesting and revealing new way of learning the Morse Alphabet. A new member of our Club devised a way of memorising the Code. It was sent to me on the 1st of April so I am obviously sceptical.....G8PG has been sent a photocopy so all will be revealed either way soon.

ELIMINATION OF "QRM"

Hands up those who have no QRM at their QTH. Want to sell your house and how much? Obviously a joke - but is it?

Due to extensive communications/consultations etc between GM3MXN G0NNI, G8PG and to some extent G0NEZ and G0FSP; our Club may well be producing a good quality QRM Eliminator soon. At present it is in the Design Stages With a Prototype planned soon. It is based very loosely on the Jones Circuit; but the GM3MXN Equipment features very strongly in its layout. My Dad - G0NNI is designing and researching all he can find on the subject being plagued more than most by Central Heating Thermostats/TVI Time Base/ etc. G8PG has - as usual - been very helpful - and Tom GM3MXN has been extensively involved I have the feeling that we (sorry - Ron G0NNI My Dad) will come up with a good buildable bit of gear - which is what our Club is all about.

Feel assured that if we do find ourselves with something worth building - we'll share with you lot in the first place. Basically we looked at a Commercially built equipment (which worked fine) but couldn't afford the price tag of around £100 or so.

See you all next time around - in the meantime - look out for our Novices they are there - I've just worked 2E0AAU - 72 es 73 and 88s to your Families.

VHF MANAGER'S REPORT John Beech G8SEQ

124 Belgrave Road, Wyken, Coventry, CV2 5BH. Tel & FAX: 0203-617367

First a few brief notes about my experiences with Amateur Radio down under. The trip was a family visit - both my wife and I have relatives living in Australia and also several friends who emigrated about ten years ago. Not wanting to miss an opportunity to operate in foreign parts I loaded as much RF gear into a hold-all to carry on the 'plane as cabin luggage (way over the top for weight and volume) as I could manage. This included two 2m rigs a 2m to 6m transverter, a Tiny-2TNC a mains PSU, SWR meter and a box of odds'n'ends with screwdrivers, pliers etc. What to do for antennas? Well I took a couple of rubber ducks for 2m and a few lengths of coax, some string and wire to make external antennas for two and six.

The packet radio proved to be the most successful. For this I used a 2m handheld and the TNC with an IBM 286 (borrowed by previous arrangement). A quick trip to the local shop to get a gender changer and a few more minutes slinging an antenna and I was on the air. All did not go smoothly however; the local BBS was unusable - down for tests. However there was a node about 40 km away which NSW (My QTH at this time was Albury NSW/Vic. border) about 150 km distant. This allowed me to get messages back to Coventry, the main reason for taking packet. Unfortunately, I didn't stay there long enough to get any replies from England.

In Sydney we had a hotel room which proved ideal for VHF....4 floors up and on top of a 200m hill to boot, overlooking the Pacific Ocean. I had hopes of working Japan or New Zealand on 6m from here but alas this was not to be!! 50 MHz was dead apart from a local horse racing track commentary, which I was told was not supposed to be there! Two metre operation was confined to FM via repeaters, there not being any activity of SSB. The most impressive contact was with a station about 300 km down the coast with the repeater situated about half way between. Unfortunately we were only in Sydney for two nights and flew to the other half's family in Perth, W.A.

In Perth I operated 2m portable in the local area and had the added bonus of another 286 available, so I could get onto packet radio again. I also tried 6m again. This time I actually managed to hear some amateurs. Two were talking through repeater, which I was told had a 1 MHz offset. I tried every offset up and down but couldn't get into it. (I was very restricted for antennas at this location, not being able to get a wire to the outside of the building!) I did hear another station calling CQ DX and not getting any replies, so I called him. I know he heard me because he called "QRZ", but he just wasn't interested in talking to someone locally.

Working Dx on VHF from Perth is difficult for two reasons 1) Activity is much lower in Oz than in Europe, 2) Perth is the most isolated city in the world. (The next nearest City is over 2000 km away and that's still in Australia! - Adelaide!) Occasionally they do get tropo openings to South Australia on two metres. I never did get to see another amateur face to face while I was there. The monthly meeting for the local club was scheduled to meet two days after we flew back to England.

Some more news from abroad. Randy, AA2U wrote to me to say he has 57 qrp contacts not on 6m, including 7Q7RM, OE2UKL and YU3ES as well as lots of South American Stations. I know quite a few club members have worked Randy on six, but if you are new to the band he's always listening around 50.080 for cw and/or ssb contacts. Although the sunspot activity is waning, there is still the possibility of Es and Auroral openings to the States and Canada. By the way Randy also says in his letter he has worked 3 countries on 2m. It must be almost as difficult as working out of Australia, unless of course you live on the borders. Randy is also QRV 222 MHz, a band we don't have over here. Perhaps you can tell us what propagation is like on that band in your next letter. Does it behave like 2m or more like 70cm?

72 & 73 John C8SEQ

SSB COLUMN Dick Pascoe G0BPS 2559

3 Limes Road, Folkestone, Kent, CT19 4AU

The first letter this time is from Brian G0NSL who started in the hobby way back in 1970 as an SWL. As he explained, he gained his licence and soon got hooked on chasing DX. He only wanted 70 and ZA on SSB to have heard/worked all DXCC countries. WAB soon followed and he now has his Diamond award. He is QRV on HF QRP with an YS130V and has managed to collect K, JA, 9K2, VE, 3A2, XX9, A92, EA9, ZB2, VU, J77, 7Q7, ZS6, ZD7, 4K4, VC8, TF5, 4K2, CU2, JW8 and C31. Quite an impressive collection of rare calls using just 5 watts into a horizontal loop for 40 - 10 and 1/4 sloper on 80m. Well Done Brian.

Bastion, PA3FFZ 5706 writes to say that he enjoys QRP SSB from a converted CB rig on 10m. His 6-8 watts PEP into a 5/8 vertical have gathered all continents for him. His transverter for 80m delivers about 1.5 watts PEP which gives some very nice QSOs within Europe especially at night. His best DX being Kiev at a QRB of abt 2000Km. He admits to using a 50 year old rig with AM on 80m. He mentions that with very careful tuning he has joined SSB nets with the others sometimes not noticing!!

Rune, SMOGKF 357 tells me that he only uses SSB as he is a little deaf. He mentions that 1991 was a very good year for him on QRP SSB using his Ground Plane aerial on 10, 15 and 20m. He also enjoys an occasional venture onto the WARC bands too. Rune writes that he has 232 countries with the last being BV2CD, in 1987 he gained WAZ/SSB/QRP!! His contact with ZL1AV in February on 20m got his a 5-7/9 report.

I have been asked a few times the best way to have a go at QRP SSB, well like most other aspects of QRP operating it is rather pointless calling CQ QRP, try tail ending (calling one station at the end of their QSO). The WARC bands are a haven for the low power SSB operator too. Much less QRM and much quieter bands, so much more likely your low power will be heard. Get out there and give it a try.

One of the high lights of Dayton this year was chatting to the other SSB operators. it is surprising how many there are. Not everyone sticks to CW! I spent a lot of time looking for another Argonaut 5515 or 509 but to no avail. One thing did happen as I predicted last year that because Heathkit had dropped out of the Amateur market, the secondhand prices of the HW series would go up. We used to be able to get an HW7 for about \$160. This hike in prices has already reached the UK so expect to pay more than this time last year.

Thats it for this time, 72 and hope to hear you on SSB de Dick.

GERMAN CLUB MEMBERS MEET AT POTTENSTEIN [Extracts from a letter By DJ1ZB]

About 25 QRPers took part in the meeting arranged by Rudi, DK4UH. After opening the meeting, Rudi suggested how stronger links could be maintained with the 'mother club' in G. DJ1ZB showed the meeting many of his projects previously described in SPRAT. The DJ1ZB Mini-ATU was available to match an outside aerial to test the various sets brought by members.

DK2EV brought a solar panel combined with a 12v accumulator and regulator. Following a question about the sensitivity of the FO receiver, it was found, on test to be the most sensitive of the DC receivers present. DH3FAA had brought a Sudden receiver combined with a simple CO-PA transmitter for 21MHz. He was given advice on PA problems in the transmitter.

Before departing on Sunday at noon, some of the QRPers drove to a nearby hill with a wooden tower [well known to local hams] for some portable operation. At the tower they met DK5HC, a professor of Bayreuth, attempting some VHF work - without response. He found the QRP equipment very interesting and Rudi gave him a copy of SPRAT a new member ?

MEMBERS' NEWS



Chris Page G4BUE

Alamosa, The Paddocks, Upper Beeding,
Steyning, West Sussex, BN44 3JW.
(packet: G4BUE @ GB7VRB
or via the DX PacketCluster)

What a pleasure it was to visit the QRP Hospitality Suite at Dayton on the Saturday evening, to meet W1FB for the first time and witness the first ever presentations of the QRP Hall of Fame. Congratulations to the recipients, especially our own G3RJV. I had spent the Friday evening in the hectic DX hospitality suites at Stouffers Hotel but found the usually quieter QRP suite just as hectic this year! It's amazing how much noise a bunch of QRPers can generate. They certainly don't use low power when it comes to eyeball rag-chewing and running hospitality suites! Many thanks to the ARCI gang for their organisation and making us all feel very welcome once again.

I had a nice surprise on my return home when I was going through the mail. A QSL from ZL8RS for a recent QSO with Kermadec gave me my last confirmation on the current DXCC list. It took me 19 years, but I wonder how long it would take now with the assistance of the DX Packet Cluster or even to do it with QRP? G3XJS is almost there too. Peter just requires cards from ZL8 and 3Y, Peter 1st.

PA3BHK suggests we adopt 18096 and 24906 as QRP frequencies. Robert worked VK3VB on 18MHz with his Argonaut II and is also QRV on 6m where he enjoyed work-

ing the auroras recently. G3YCC (@ GB7GBY) has just finished a four band SSB/CW 20w transceiver using some TSO modules, an MLX board, Cirkit PA and Howes digi display. Frank is successfully using a 136 feet doublet with open wire. UA1AUT is now RW1AU. DJØGD achieved WAC in 66 minutes in the CQ CW Contest using 3w to a GP and then on SSB in 86 minutes in the WPX Contest. Peter's DXCC is now 191/167 and he has worked ZS6BUD several times on two-way QRP on 21060.

G4EHT has just finished a little 2w transceiver for 40m. The TX is per the Halifax with a DC RX built around it. Bill says it works well (579 from EA). QSLs from LX and JA for Y24TG have brought him up to 23 DXCC on two-way QRP. W6SKQ will be QRV from KH6 during the last half of October with his Argonaut 515. Bob has just built the Universal QRP Transmitter for 40 metres and has been trying out different transistors in the PA.

GØNEZ asks members to listen for the new UK novices with their 3w and 2E0 calls. He mentions 2E0AAQ, son of GØETV, recently working a big pile-up on 21130! Dave says that his father, GØNNI and GM3MXN are currently designing a QRP QRM Eliminator for HF use. GWØOSQ says he spent two weeks continuously monitoring 1.843 recently and didn't hear a sound! Bev asks "where have they all gone?"

GØFAH is on the look-out for a Ten-Tec VFO module that was used in the Century, Argonaut and Argosy rigs and any other Ten-Tec boards, filters, crystals, etc. Bill wants to make an optimised CW rig with a combination of the best ideas and bits from the Ten-Tec range. The search for IOTA QSOs by G3DNF continues. 4KJ3OLL and 4K4BAT/A were a couple of useful ones hooked by Gordon recently. He also worked the VP8SSI gang.

GØNOV is active on 40 metres SSB from Birmingham. G4AYO reports that Sergei (6506) now works at Cape Vankarem Polar Station and was one of the operators of 4K4/UZØQXY on Bear Island between September 1990 and August 1991. GWØOSQ is asking for old SPRAT magazines for his collection.

He is willing to pay a "sensible" price for good copies (0495 757221). Bev is using a Century 22 to an 80 metre dipole and 184ft long wire. Best DX has been JA and KL7 on 10m on CW.

F1NZY reminds us of the HA QRP Contest between the 1st and 7th November on 80m CW. Maximum power is 10w and its exchange is RST, QTH and name of operator. Logs by 21st November to Radiotechnika Szerkesztosege, Budapest Pf 603. H-1374, Hungary. Steve says that all participants who send in a log will receive special participating awards as a memento of the contest whilst the top scores will receive the Radiotechnika magazine free of charge for one year. This contest has been running for many years and is always very well supported by European QRP stations.

GØFPV has been "finding his feet" in the world of QRP with his TS940 at 2w into a G5RV. Ian worked VK and ZL in the BERU contest and thought he was in dreamland when a VU2 plucked him out of a pile-up and gave him 589!

Back in April I had the pleasure of having F6BHP drop in for brief visit while he was passing through Sussex. DJ7ST draws our attention to the QRP Summer Contest organised by AGCW-DL over the week-end of 18/19th July. The rules are as for the Winter Contest. I'm looking forward to the European Field Day in June when I shall be G4BUE/P in the new QRP Class.

No information received about this years Yeovil QRP Convention so I cannot report on the winners of the Fun Run and Construction Challenge, etc. G3XJS will be visiting the south of France in August and is trying to get on from 3A.

AC4AC has added an HW9 to his 6 metre QRP equipment and has been having a great time on the HF bands with 2w. Henry was chuffed when a 4X called him and with a QSO with ZD8. He finds he can reduce the power control on his TS680 right down to milliwatt power levels and applauds the manufacturers who allow this.

I recently had a Yaesu FT990 in the shack for a few days to check out and found that I couldn't reduce the power level below 8

watts. The TS950 and Yaesu FT1000 are the same. I cannot understand why manufacturers don't allow the power level of new rigs to be reduced to at least 5 watts to cater for the QRP market, especially when I hear that 10 watt versions of all the new Japanese transceivers are available for the domestic Japanese market only!

With reference to the request in the last SPRAT from FE1JBX for details of the K1BKT rig, WB6AWM/7 (C.J. Appel, PO Box 241, Electric City, WA 99123) wrote to suggest that he believes Pierre is referring to a K1BQT design that appeared in the January 1989 edition of Ham Radio, which he has. Cliff will gladly send Pierre a copy of it if he will write to him. He believes the rig is available in kit form in the USA but cannot find the advertisement.

I notice that the new 20 metre transceiver from MFJ, model number MFJ-9020, has been designed by K1BQT. Could this be the same design?

G3XJS lent GØRBB his LCK 40m TCVR to get Mike on the air until he builds his own. Peter then QSOd him using another rig he had built, a G3TSO multi-band TCVR and asks if this brings a new whole meaning to the expression "using homebrew gear" as he had built the equipment at both ends of the QSO!

After many years of SWLing, GØNSL is now chasing DX with a TS130V at 5w to a 40m horizontal loop and 80m quarter wave sloper. Brian has 116 DXCC mainly on 15m and also chases Russian oblasts and IOTA all on SSB. OE6HS is continuing with his 2mW HE/NE lasers and diode lasers on 670 nanometers working over 5 to 15kms line of sight paths.

That about closes the files this month. Sorry that Pam and I cannot hold our regular Summer QRP Party this year (see announcement elsewhere in SPRAT), but we should be back to normal in 1993. I'm starting a new position with my work in the middle of June and it's likely to be a lot more demanding than what I've been doing for the last two years!

Let me know how your summer goes, by 20th August please. 73. Chris.

THE 1992 SUMMER QRP PARTY

The purpose of the above heading is usually to announce our Summer QRP Party, but this year we are breaking with tradition because the purpose of this note is to announce that **THERE WILL NOT BE A QRP PARTY THIS SUMMER!** Pam and I very much regret this after holding parties regularly for the last six years, but feel we really have no alternative this year. We have decided to re-landscape our garden this summer and the timetable we have set ourselves means the top part of the garden will probably look like a building site and certainly not in any fit state to host a party! Please bear with us and all being well we will make up for it in the summer of 1993.

G QRP CLUB : OFFERS FROM DAYTON

DIGITAL DIAL MODULE : ADD DIGITAL READOUT

SUITABLE FOR MOST RECEIVERS/TRANSCIVERS : READS KHz ONLY. A READY BUILT MODULE THAT REQUIRES 9-12v. USES THE 7216D IC [£25+ ea. IN THE UK] LIMITED STOCK
I connected one to a pin on the Argonaut 515 Receive Mixer Board and ... instant digital readout ! [G3RJV]

SPECIAL MEMBERS PRICE : £20 + 1.48 Postage

From: Dave Aizlewood, G4WZV, 36 King St. Winterton, Scunthorpe, DN15 9TP

ALSO WE HAVE NEW STOCKS OF THE SSB CRYSTAL FILTERS

(See Members Handbook for Details and Prices)

NOW AVAILABLE : HF BANDS MIXER CRYSTALS

21.500, 28.500, 35.500, 43.000 MHz All at £1 each + 1MHz and 10MHz at 50p each

The crystals and filters are available from G3RJV

WITH ANY ORDERS PLEASE SEND A SELF-ADDRESSED LABEL

THE ANTENNA EXPERIMENTER'S GUIDE

(ISBN 0-9516024-0-3) by Peter Dodd G3LDO

200 pages and 120 illustrations on experimenting with antennas.

Includes material not previously published.

Building and using simple RF test equipment.

Measurement of antenna element and feeder resonances

Measurement of impedance; the noise bridge & 3-meter method.

Electric & magnetic field strength measurements.

Antenna adjustment and performance measurement.

Modelling of HF antennas at VHF & polar diagram plotting.

Using computers in measurement and modelling.

Experimental antenna and mast construction.



£8.90 (£7.90 to Sprat members) 80p P&P UK.

Overseas, £1.20 surface mail, £3.00 air mail

Equivalent currency or credit card

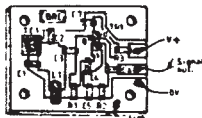


From: 37 The Ridings, East Preston, West Sussex, BN16 2TW

Tel 0903 770804



**BLUE
ROSE
ELECTRONICS**



**NEW IMPROVED BFO/
OSCILLATOR KIT:**
450-470kHz.
Small size,
excellent
building block.
Beef - up your
scanner or SW set
Special price for G-QRP
members.....£4.99



SURFACE MOUNT SUPPLIES

A full range of SURFACE MOUNT COMPONENTS AND TOOLS for Amateur and Prototyping use.

RALLY PACK: Over 100 popular, full specification SMD's inc. 30 transistors (NPN & PNP), electrolytics, ceramic chip caps and SOT23 zeners. Very limited offer for autumn season (cat. price £13.52)£4.99 (inc P&P).

SMD SOLDERING TRIAL PACK: Try your hand at soldering with smd's - a dozen chips of various sizes. Fantastic value.....£1 (inc P&P)

NEW 1992 catalogue
OF COMPONENTS AND KITS
SEND 50p



MAIL ORDER ADDRESS

Telephone: 0925 72 7848
538 Liverpool Rd, Great Sankey, Warrington
Cheshire WA 5 3LU



Established June 1987

JANDEK



We also stock a range of components, including MINIFORDD BC'S.

See our whole range at various radio rallies throughout the year.

Send SSAE for NEW CATALOGUE.



6 Fellows Avenue
Kingswinford
West Midlands DY6 9ET
Tel: 0384 288900

Callers by appointment only.

Derek R. Pearson
G3ZOM G-QRP 3091

GOLLEDGE

ELECTRONICS

Golledge Electronics Ltd
Merriott
Somerset
TA16 5NS

Telephone: 0460 73718
Facsimile: 0460 76340

SPECIAL SPRAT OFFER - AMATEUR BAND CRYSTALS

All HC-25/U, fundamental mode, 30pF load capacitance.

Band	Channel	Other Frequencies			Price
160m	-	1850			£5.00
80m	3560	3540	3550		4.50
40m	7030	7025			4.50
30m	10106				4.50
20m	14060	14030	14040	14050	4.50
17m	-	18080	18090		4.50
15m	21060	21040	21050		4.50
12m	-	24910			4.50
10m	28060	28040	28050		4.50

HC-25 holders - 50p each *when ordered with crystals.*

Converter and transverter crystals:

HC-18/U, 3rd overtone, series resonant.	
22.0, 24.0, 31.333, 38.6667, 42.0 MHz.	4.50
65.0 (HC-25/U), 94.0 MHz 5th overtone.	5.00

Send SAE for lists of stock crystals, TTL oscillators for microprocessors, radio crystals. We also stock crystal, monolithic and ceramic filters on 455kHz, 9.0, 10.7 and 21.4MHz.

VAT and first class UK postage included. Add £1.00 for overseas orders.

DC TRANSCEIVER KITS

Single Band Kits for 3.5, 7, 10MHz £40 each inc post
14, 18, 21, 28, 50MHz £55 each inc post
Three Band Kit for 3.5, 7 and 10MHz £60 each inc post
(PCBs and construction notes only for above at £10 inc post)
White Rose 50 to 28MHz Transverter Kits £25 (PCB only £5)
Overseas members add £5 for postage. Cheques "John Beech"
JOHN BEECH, G8SEQ, 124 BELGRAVE RD. WYKEN, COVENTRY, CV2 5BH



SMALL SCALE SOLAR AND WIND POWER

Sun and Wind Power at Affordable Prices

For Information and Prices of Solar Panels, Wind Chargers
and other Associated Products. Send an S.A.E. to

BOB KEYES, GW4IED

4 GLANMOR CRESCENT. NEWPORT, GWENT. NP9 8AX

10% REDUCTION ON ASI PANELS TO CLUB MEMBERS

NEW! DTR7 - 40m CW TX-RX



The DTR7 is building on the success of its companion, the 80m DTR3. Featuring module construction, with no less than five PCB's, the rig incorporates all the essential features of a transceiver without indulging in expensive gimmicks.

Covering the entire 40 metre band - 7.0/7.1 MHz - the Transmitter produces a clean 2 watts of CW. It requires only about 350mA at 13.8V (key down), which, combined with its compact size and light weight makes it ideal for portable operation.

The Receiver section (Direct Conversion), can resolve signals of less than 1uV. Selectivity is around 250Hz @ 6dB. AF output, up to 1/2 watt, is for 8 ohm 'phones or speaker. Sidetone and RIT (plus and minus 4kHz shift!) are built in.

ALL COMPONENTS AND HARDWARE INCLUDED

£87.50 (Kit)

£140 (Ready Built)

NEW! PM20 POWER METER for QRP

The PM20 is a combined 50 ohm Dummy Load and direct-reading milliwatt meter. Designed specifically for the QRP enthusiast, it accepts any frequency from 10kHz to 150MHz. VSWR is less than 1.5:1 at 150MHz, about 1.1:1 at HF. A dual range instrument - 20 watts or 1000 milliwatts FSD - it permits readings down to 25mW to be made easily.

ALL parts (Yes! Case AND meter!) are included.

£19.50 (Kit)

£28.75 (Ready Built)

For full details of our kits, send SAE to

LAKE ELECTRONICS
7 MIDDLETON CLOSE, NUTHALL, NOTTINGHAM NG16 1BX

OR RING ALAN. G4DVW. ON 0602 382509



KANGA PRODUCTS

3 Limes Road, Folkestone, Kent, CT19 4AU.

Our spring clearout was so successful that we have decided to continue it for a further period.

CLEAN OUT EXTENDED UNTIL 1/9/92

NEW!... NICKY'S TRF RECEIVER AS LAST SPRAT (less Variable cap)	£10.95		
Transistor & diode Tester	£ 8.95	OXO transmitter	£ 5.95
One Transceiver (all 5)	£24.95	Stockton Power Meter	£12.95
Low Pass Filter (Band ???)	£ 3.95	Crystal Marker	£ 9.95
Sudden Receiver (Band ???)	£12.95	Two Tone Oscillator	£ 9.95
Iambic Keyer	£12.95	Keyer Speed Control	£ 1.95
Morse Oscillator kit	£ 9.95	A.F. Amplifier	£ 9.95
The V.F.O.	£ 9.95	100W Dummy Load	£ 8.95
Transmit / Receive Control	£10.95	Simple T/R	£ 7.95
P.S.U. Regulator / Control	£ 9.95	160m for FT707 / 77	£19.95
Multi Channel Oscillator	£ 9.95	Audio Mixer Unit	£ 3.95
5 Volt P.S.U. kit	£ 1.95	Light Oper'd switch	£ 3.95
Crystal on 1.850, 3560, 7030, 14060, 21060		all available @	£ 4.50
Blob Boards (see Catalogue for Info)		Large £ 1.50, small	£ 1.00
C.W. Audio Filter kit fits twist AF output and your 'phones..			£ 9.95
L.C.K. CW Transceiver, available for 160m, 80m and also now 40m			£35.95
C.S.P. SSB Transceiver, including the Crystal Filter Now Only			£55.00
C.S.P. Main Board Only	£29.95	C.S.P. IRT control	£ 9.95
C.S.P. DSB Generator	£12.95	C.S.P. Audio Filter	£ 9.95

Bargains from the USA!, Counter ICs, ICD7216D cost here £25, I have a small stock at only £15 each. 6 pole SSB filters 2.4Kc B/W £12 each

Please add £1 p/p to each order

An SAE (SPRAT sized) will get a free copy of our Catalogue

Callers by appointment only please

KANGA PRODUCTS 3 Limes Road Folkestone CT19 4AU
Tel: 0303 276171 or 0860 363915 0900 - 1900