



# SPRAT

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DEVOTED TO LOW POWER COMMUNICATION

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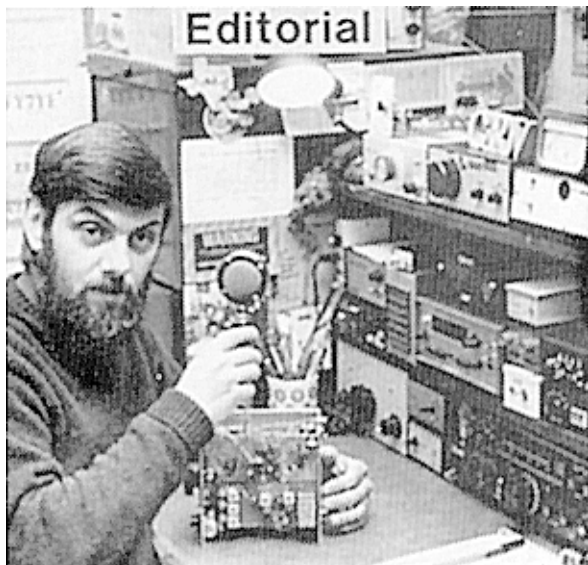
**DIETER TRUMMER OE6WTD MEMBER 5126**

Notice the ONER Transceiver in the tiny box (on top)

Dieter is 90% QRP CW but also QRV on RTTY : PR@OE6XYG

**THE FTX A REAL QRPp VSWR METER  
DIPOLE INSULATOR DUAL BAND RECEIVER  
THE LYNNE555 THE O.T.S. TRANSCEIVER  
UP & OUTER ANTENNA FE1MOG KEYS  
80M PHASING RECEIVER KITTEN II BOARDS  
NEW W1FB BOOK COMMUNICATIONS FORUM  
QRP CALENDAR NOVICE NEWS SSB NEWS  
YEOVIL CONVENTION MEMBER'S NEWS  
YOUR SUBSCRIPTIONS ARE DUE THIS ISSUE**

# JOURNAL OF THE G QRP CLUB



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**Rev. George Dobbs G3RJV**

Dear Member,

May I wish you all a very happy and fulfilling 1992.

Please note that ALL SUBSCRIPTIONS ARE DUE. The details are printed in the centre pages with information on the change of address for subscription payments in the UK. Please read this information very carefully to save you [and us] inconvenience. After an enormous amount of time and effort on behalf of the club, G4HYI is reducing his work load. On behalf of us all, I thank David for all his efforts and Jennifer for her consistent support.

Another landmark in this issue, is yet another "Fun Rig" from GM3OXX. George gave us the OXO, the STX, the ONER and now we have the FTX (Finger TX).

You will also note a change in the type face of this issue, brought about because I now have the correct printer driver for our laser printer. SPRAT is prepared on an IBM PC286 with an Epson GQ5000 Laser Printer using MS WORD In Windows. I can accept text on 3.5" disc format in WORD (Windows or DOS), MS Write, MS Works, WordPerfect, WordStar and Text Only (PC-8). But I also take pencil notes on scraps of paper!

## HELP US TO HELP YOU

72/73 *George*

I get an average of 5 items of club mail per day [about 30 replies required in a week] and often run up to 10 days behind on 'radio mail'. In common with other officers we try our best. If members observed some simple rules it would help a lot:

1) An SAE or even an address sticker is useful. 2) Please give your full name and address [QTHR takes time to sort out]. 3) If it is a technical query - send a copy of the circuit - otherwise we have to find it. 4) When asking questions, lay them out with gaps, so that an answer can be inserted and the letter returned.

And..... be patient : the club does not employ anyone, we donate time from other activities and jobs.

# THE F<sub>INGER</sub> TX

A NOVEL "FUN RIG" BY

**George Burt GM30XX**

**A BASIC MULTIBAND EXCITER WITH  
FULL BREAK-IN AND TOUCH PADDLE**

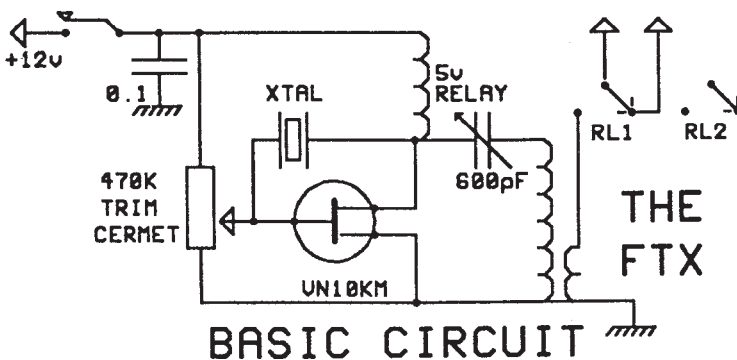
The BASIC CIRCUIT shows the original idea, built on a blob board with a 5v. relay as the RF Choke. With no crystal fitted and the trim pot set to ground - key down and adjust until there is 5 volts across the relay coil (or 'till it clicks in). Fit the crystal.....and off you go

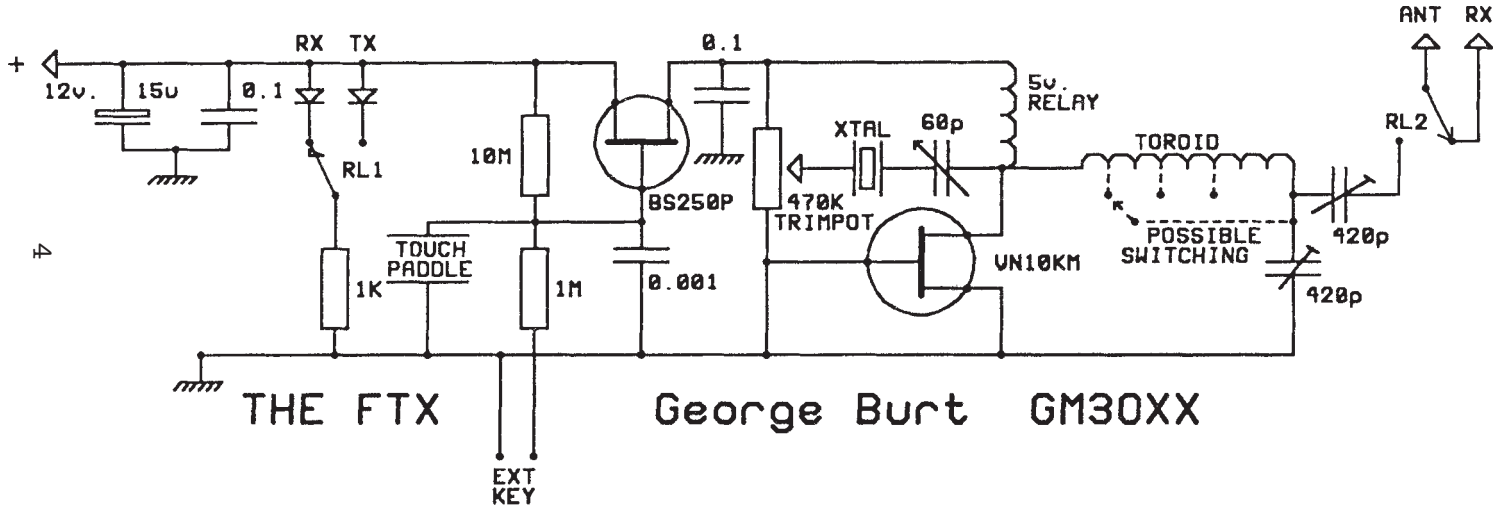
Every Fundamental crystal in my junk box oscillated, from 100KHz to 28.060MHz, with no output tuning. With a simple series tuned system and link coupling it was possible to obtain over 100mW output up to 14MHz. It also doubles and triples very nicely, tripling to 21MHz from 7MHz, 60mW was obtained. 14MHz doubled to 28MHz produced about 40mW - measured into 50 ohms with a Stockton Power Meter. In the improved single band version, instead of the usual series pass keying transistor, a P MOS FET was used to allow touch paddle keying as part of the PCB. There is also provision for using a standard keyer. To give a simple option, the PCB layout is for a single band version, but multiband switching or plug in coils would be easy to include.

Compression trimmers [Tandy] are used to tune the output coil. On a power meter, on all bands to 14MHz, 250mW output could be achieved. With loading adjusted for 100mW out [ so that I could just add a decimal point on the 1w QSL Card ! ] using an ATU into my 44ft centre fed zepp, lots of QSOs were had on 7,10 & 14MHz- Great Fun!!

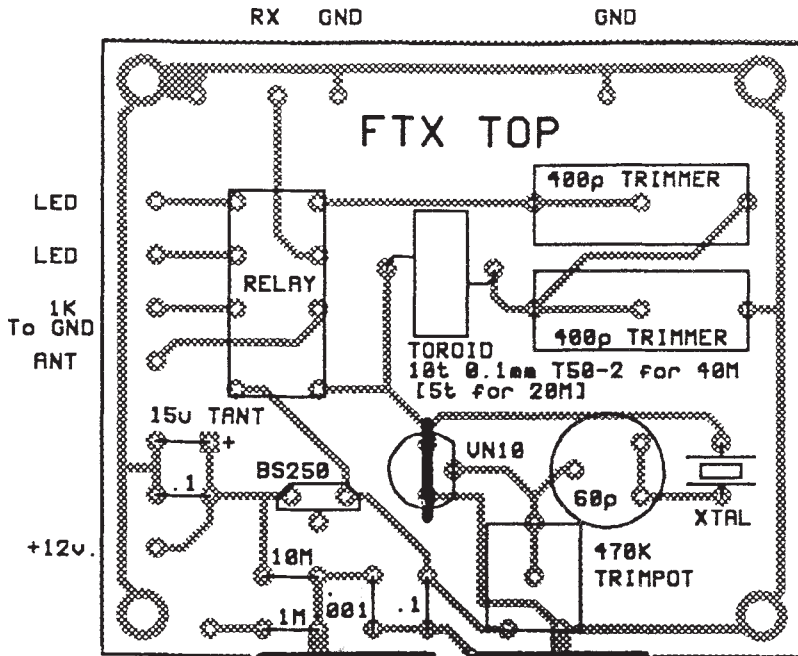
Power output can be increased by raising the supply voltage, in a test with the original lash-up, at 30volts, over half a watt could be obtained. But stick with 12volts, as the PA only receives 7 v and with 35 ohms series resistance to limit the current, no heat sink is required on the PA.

Do not hang any decoupling capacitors across the key socket, the changeover becomes delayed! If you don't want the touch paddle, just cut it off the board. I would be easy to add a PA to the circuit (a drawing has been done for one) and it is ideal for driving any small broadband PA system.



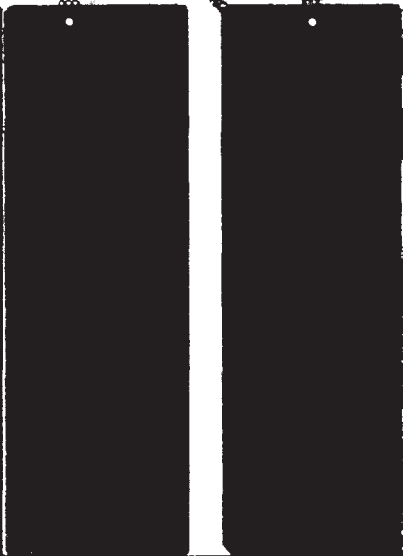


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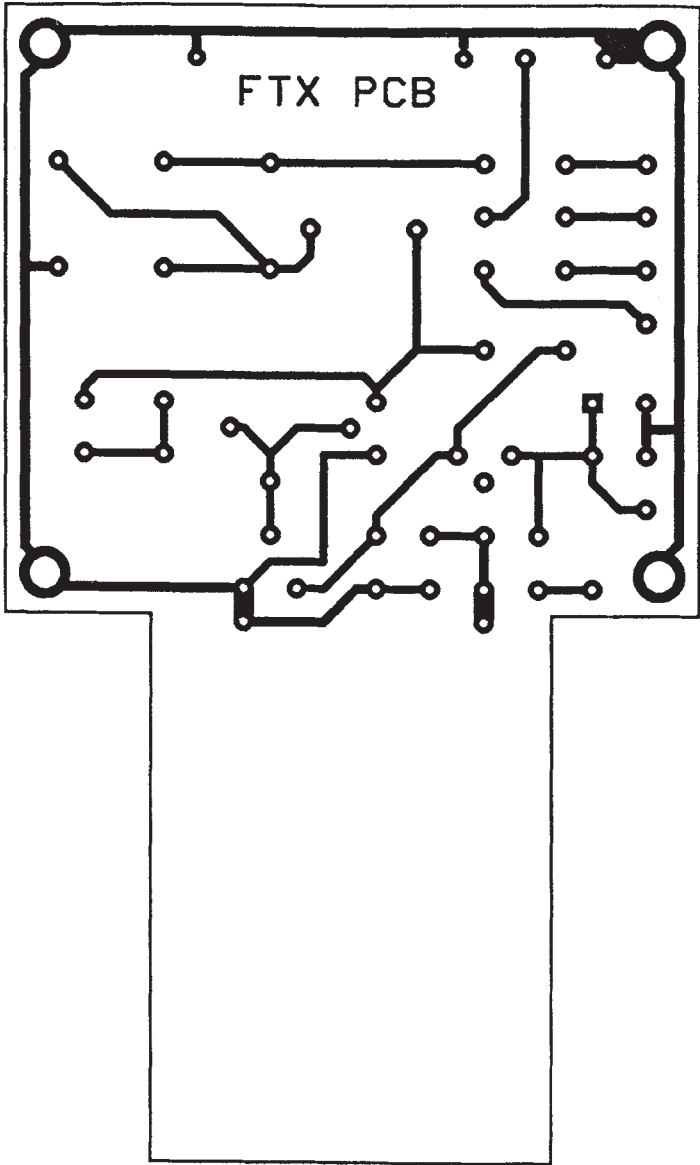
KEY JACK

TOUCH PADDLES ON TOP OF BOARD



PCB PINS THROUGH BOARD JOIN TRACKS/PADDLE





# A REAL QRPp VSWR Meter

Ha-Jo Brandt DJ1ZB

From ordinary VSWR meters it is well known that on a given aerial a higher VSWR is measured when using 100 watts instead of 10 watts of RF power. Therefore, to achieve correct results qrp operators should have a VSWR meter as sensitive as possible. At full sensitivity the meter described here will need less than 10 mW to reach the SET point, over the range 1.8 to 30 MHz. On the other hand, about 16 watts is the maximum permissible power, because the HPA 2800 diodes are driven to their maximum PIV ratings.

## The Circuit

For better sensitivity, two current transformers are use, with 20 turns each, Their inductivity may differ, due to core tolerances, but should be about 450 uH or more. The division ratio of the capacitive divider C1/C2 is rather low and its total capacity high, to provide a low impedance source at 1.8 MHz. However, at 30 MHz this capacitance is too high to achieve a low VSWR in the 50 ohms line. This problem has been solved by incorporating this capacitance into a low pass filter with a cutoff frequency of about 40 MHz (Fig.1).

## Screening

The 430 ohms load resistors across the current transformers cause a problem being not so critical with less sensitive VSWR meters having load resistors in the tens of ohms range: Stray coupling from the 50 ohms line into the diode circuit! To prevent this, the circuit diagram shows three different screened areas: (1) the 50 ohms line, (2) the area of the divided cable voltage, and (3) the area of the current transformers' output voltage.

Area 1 contains just the 50 ohms line, the current transformers T1, and the capacitors C1, C3 and C4. For the line the center conductor and insulation of a coaxial cable is used which just allows the current transformers to be slipped over its diameter. A screen between the transformer windings and the conductor has not been found necessary. A u-shaped metal plate acts as a screen for area 1. The leads from C1 and T1 leave this area through three holes in this metal cover.

Screening between areas 2 and 3 is not so critical. Both may be arranged on a common pcb. However, two separate metal bolts are used for grounding the current transformer leads and capacitor C2. Also, a grounded "guard ring" should be provided to separate the diode terminals belonging to either area 2 or 3 (Fig.2). The ground points for the blocking capacitors at the FWD and REF terminals are not critical. The pcb is fastened to one side of the u-shaped screen of area 1.

## Alignment

A signal generator or a qrp transmitter with good harmonic suppression is needed, and 50 ohms termination. Firstly, trimmer C2 is set at 2/3 and C3 at 1/3 of full mesh. Due to the two current transformers there may be three initial states: The meter may operate right, it may operate right, but in the opposite direction, or forward and reverse indications may be equal. By reversing the polarity of one or both current transformers at "x" the correct connections must be tried out. Then C2 can be adjusted for minimum reverse indication at 14 MHz.

Then the low pass filter must be adjusted for minimum VSWR of the 50 ohms line up to 30 MHz. A sensitive VSWR meter like that to be built would be nice for this purpose (raising the old question what to be older, the hen or the egg), but normal resistive bridges are sufficiently sensitive for this job. The adjustment is done by tuning C3 and changing the turns spacing of Ls, and by inserting an optimum capacitor for C4 (depending on the capacitance of the coaxial jack itself). During the adjustments VSWR checks should be made on both directions, TX - ANT, and ANT - TX. OMs having access to a modern network analyzer will find that a return loss of about 30 dB can be achieved, and that the insertion loss of this VSWR meter will be about 0.2dB. Finally, C2 can be readjusted for minimum reverse indication at 28 or 30 MHz.

### Meter dial

For the indication of CSWR there are two choices to employ a meter. The first is to buy a 50uA or 100uA instrument and to draw an additional VSWR dial onto the uA dial. Assuming a linear diode characteristic, the formula  $I = M \cdot (\sqrt{S} - \sqrt{1/S}) / (\sqrt{S} + \sqrt{1/S})$  may be used to calculate the current value for a specific VSWR. (S= VSWR; M=end value of meter dial).

The other way is to purchase a cheap or used VSWR meter, even if it were designed for CB purposes only, and to replace the whole internal RF circuitry. Then, however, some tests should be made with the instrument of this meter. Most cheap instruments carry a VSWR dial according to the formula mentioned above, but show a noticeable non linearity between current and deflection. From the formula it can be deduced that the meter current for the SET point must be three times the VSWR 2 current and two times the VSWR 3 current. On many cheap instruments, the real SET point will be found at about 80% of full deflection, and therefore a new SET mark should be drawn there.

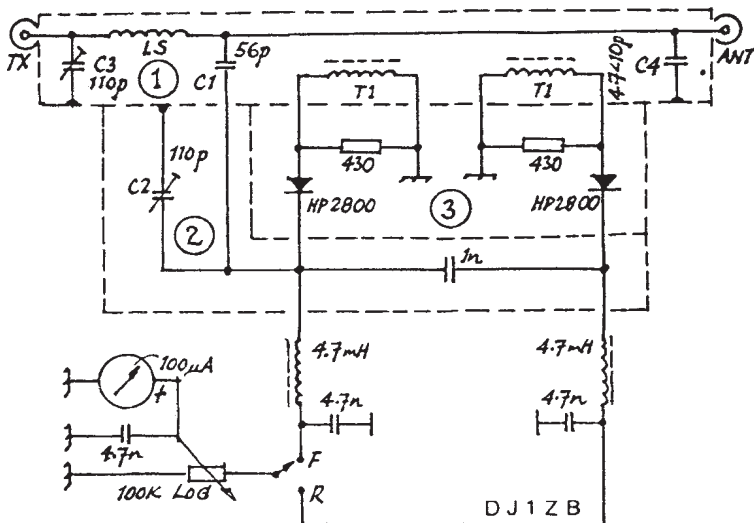
### Ferrites

From correspondence I know that, depending on the market situation, members may have difficulties to obtain the Amidon FT50B-43 core. As the inductivity and the turns number of the current transformer is given, one may try to substitute other materials. For RF nickel zinc ferrites like the Amidon 43 or 61 materials are to be preferred. Most high permeability ferrites, however, are magnesium zinc, and tend to get hot in high power applications. This may not be critical in qrp operation. If it should be impossible with other cores to reproduce the inductivity of 450 uH, the parallel load resistor must also be reduced, with consequent losses in sensitivity. The general relation is that the inductive reactance of the current transformer should be at least ten times the load resistor, at the lowest operating frequency.

Ls 5 turns 10mm inner diameter, self supporting, 1mm dia wire, spaced to about 15mm length.

C2 & C3 Philips 110pF foil trimmers. C1 & C4 Ceramic disc capacitors 400v.

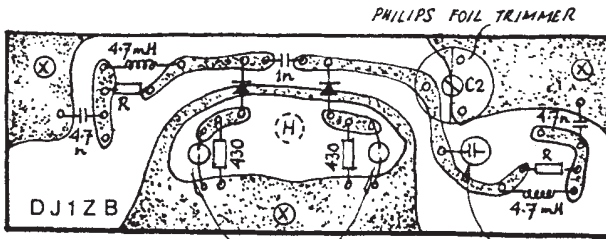
T1 20 turns PTFE insulated 0.5mm dia. 'wire wrap' wire on Amidon FT50B-43 core [FairRite part 5943001901] [1] [2] [3] are the Shielded Sections : See Text



**QRP VSWR METER**  
SET POWER · MIN. 10MW · MAX. 16W



# VSWR METER ..... LAYOUT



"H" - LOCATION OF HOLE IF SINGLE CURRENT TRANSFORMER.  
USED FOR OTHER VSWR METER DESIGNS.  
"X" - 3 HOLES FOR GROUND BOLTS.  
"R" - 18K RESISTOR SOMETIMES REQUIRED TO IMPROVE REF.  
MINIMUM, AT LOWEST FREQUENCY.

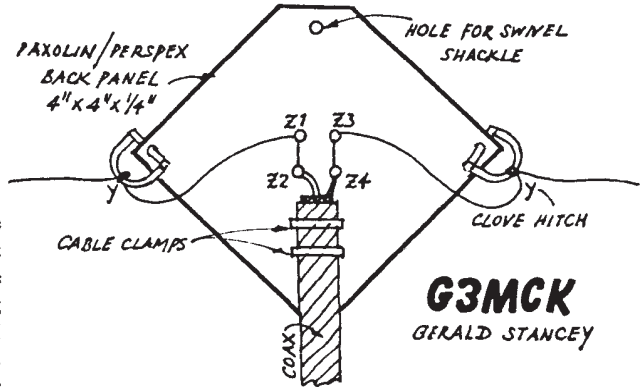
## DIPOLE CENTRE INSULATOR Gerald Stancy G3MCK

As experimenters, many of us live surrounded by things we have just cobbled together. However, there are a few things that are worthwhile doing correctly the first time. In this class I would put antenna work. A cobbled antenna will always fall down at the most awkward moment, also climbing ladders loses its attraction with the passage of time!

The insulator described was designed for inverted Vee Dipoles where there is no constraint on the weight. In fact, it is not very heavy so could probably be used in the centre of a normal dipole but I have not tried it. It is meant to be a 'fit and forget' item and seems to be just that.

The drawing is self-explanatory but the following points are worth noticing:

1. Seal the ends of the coax joints with Araldite or non-acidic sealant. ie. one that does not smell of vinegar
  2. Marine fittings are expensive but last forever and are easily obtained at a sailing emporia - of which there are several in the immediate area.
  3. Stranded insulated wire is more resistant to wind and corrosion effects than a bare single conductor
- Secure each leg of the antenna to the D-shackles at points 'Y' with a clove hitch knot, leaving enough wire to connect up to the centre insulator. Feed one leg of the dipole through Z1 then through Z2 (to hold it in position) and join to the inner of the coax. The other leg of the dipole goes through Z3 and is joined to the coax braid which is led through Z4. Then effectively weatherproof the entire joint.



## DIPOLE CENTRE INSULATOR

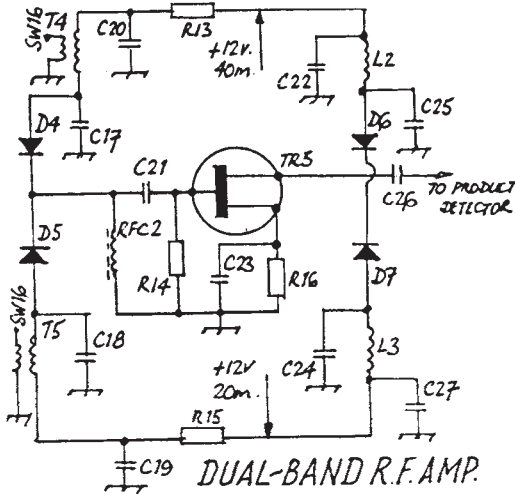
# DUAL BAND RECEIVER

Steve Harley G0FUW

The receiver operates on forty and twenty metres using the well known direct conversion principle to good effect. Performance on both bands is excellent with ample audio output available to 'fill the room' if required.

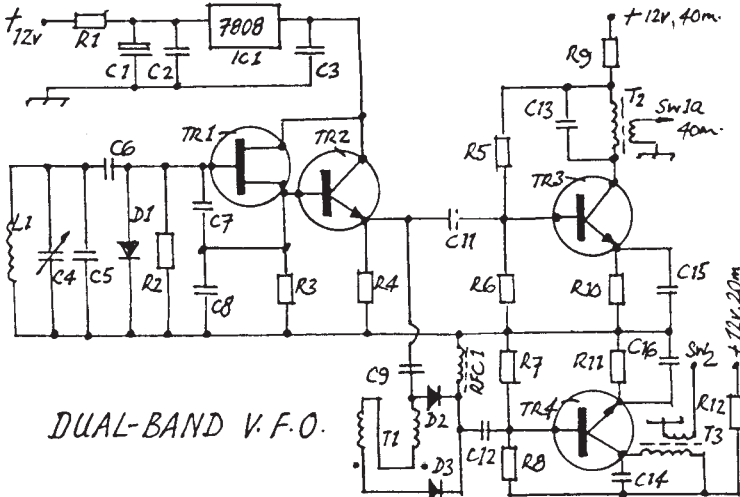
At the heart of the set is a dual band VFO. The oscillator operates on 7MHz and feeds two class A buffer amplifiers, one of which is preceded by a diode doubler. As with much of the circuitry of this nature, the constructor is referred to Solid State Design for the Radio Amateur for detailed discussion / explanations.

The RF amplifier is straight forward and passes signals to mix with the VFO, in another 'Solid State Design' building block : the MC1496 product detector [updated here to suit the 14 pin DIL package].



## DUAL BAND RF AMP

- R13 1K
- R14 100K
- R15 1K
- R16 270
- TR5 MPF102
- D4,5,6,7 1N4148
- T4 KANK 3334
- T5 KANK 3335
- L2 KANK 3334
- L3 KANK 3335
- RFC2 47uH
- C17,18,24,25 100p Poly
- C19,20,22,23,27 0.1uF
- C21 3p3 Cer
- C26 10p Cer



## DUAL-BAND V.F.O.

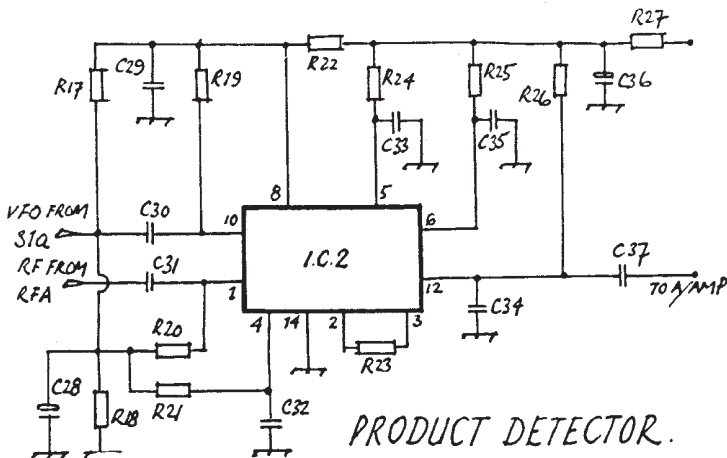
## DUAL BAND VFO

- R1,9,10,11,12 100
- R2 100K
- R3 820
- R4,6,7 1K
- R5,8 10K
- IC1 78L08
- TR1 MPF102
- TR2,3,4 BC108
- D1,2,3 1N4148
- RFC1 1mH
- T1 SEE TEXT
- T2 KANK3334
- T3 KANK3335
- C1 100u
- C2,3,9,12,15,16 0.1u
- C4 25p VC
- C5,13,14 100p Poly
- C6 220p s.m.
- C7,8 470p Poly
- C11 68p Cer \*

L1 30t. 28swg on 4.8mm Form+core

Note: T1: 10t Bifilar 28swg T37 FERRITE Core [dots=start]

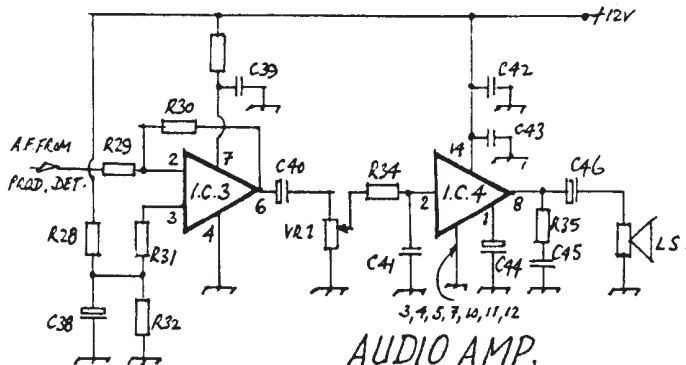
\* C11: Select for equal outputs on both bands.



### PRODUCT DETECTOR

- R17 820
- R18,20,21 1K
- R19 510
- R22 1K2
- R23,27 100
- R24 10K
- R25,26 100
- C28 4u7
- C29,30,31,32  
33,34,35,37  
All 0.1uF
- c36 100u
- IC2 MC1496

PRODUCT DETECTOR.



### AUDIO AMP

- R28,32 27K
- R29,31 2K2
- R30 47K\*
- R33 56
- R34 22K
- R35 2R7
- VR1 10K Log
- C38,39,40 10u
- C41 .001u
- C42,46 220u
- C43,45 0.1u
- C44 4u7
- IC3 uA741
- IC4 LM380

AUDIO AMP.

LS 8Ω Speaker

\*R30: select to suit overall gain

The audio output from the product detector is subjected to two stages of amplification. Firstly by a UA741 op amp, then, following the volume control, an LM380 power amplifier. No filter is included as none was found necessary. Filters could be added if required.

The bandswitch selects the appropriate VFO output, RF input and puts Dc onto the required tuned circuits. My prototype was build 'ugly style'. The boards are based upon a Maplin aluminium box 8" x 6" x 3" with a medium size vernier dial for tuning. Setting up is just a matter of peaking the various tuned circuits. The VFO is best set be using another receiver, the buffer amps into an RF Probe with a 0 - 2.5v. meter. Final Tweaking is best done by ear. Cost of ALL the parts was around £35.

# THE LYNNE 555

Ken Ruiz G4SGF/ZB2M

## Introduction

The Logarithmic Yes-and-No NE555 audio oscillator is a simple yet effective piece of test gear which will not break the bank to build - about £6 with careful buying including a slow motion drive - and can be put together in a few hours or so. Logarithmic Yes-and-No because Yes, the ranges do have a logarithmic relationship to each other but No, not a logarithmic progression within the range. It will come as no surprise that the NE555 is central to this item. My wife's name is Lynne - now there's a coincidence!

An acceptable audio oscillator can be made from a single 555 in astable mode but at the price of stability. The 555 is a whole order of magnitude more stable in the monostable mode, but it won't oscillate. However two 555s in monostable mode can trigger each other to provide a more than stable enough oscillator adequate for the majority of applications. The component count is doubled as is the cost, but twice hardly anything doesn't amount to a great deal.

The oscillator provides two outputs, always 180 degrees out of phase with each other, and when DC coupled can be used to test logic circuits. The lowest frequency on mine with the component values given is 0.15Hz - one cycle per six seconds, three seconds high and three seconds low. The highest frequency is 130kHz.

The output waveform is square, with harmonics heard well into the HF spectrum - I lose them beyond 30MHz.

## CIRCUIT

The timing components here are the sum of R1 and VR1a (R2 and VR1b) and the capacitors chosen by S4. If VR1a=VR1b, R1=R2, C5=C11 through to C10=C16, then the output frequency is given by  $f=0.45/RC$ . If the values of C are arranged to rise by a factor of ten each time, the scale on the dial can be used for all ranges, just a multiplier needs to be taken into account. If VR1 is ten times R1, we get a slight overlap between ranges. The output frequencies are always slightly lower than calculated in this circuit, presumably because of the propagation delays involved with triggering each other.

Rs5+6 serve for short circuit protection at the output. Ss2+3, by including (or not) Cs3+4 at the output serve to AC or DC couple the oscillator outputs to the circuit under test.

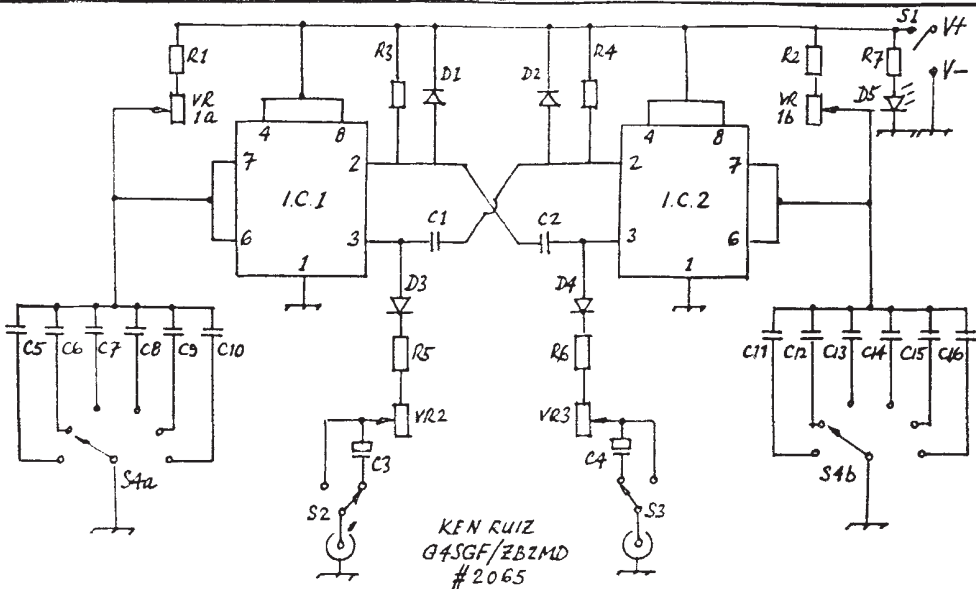
The maximum frequency that can be had from 555s in this set up is about 100kHz. Expect the reproducibility of the scale-suggested frequency to fall off around here, and nothing much higher an any case.

The use of close tolerance components in the frequency-determining positions will enhance the accuracy of the scale across all ranges, but don't pay for something you neither need nor want!

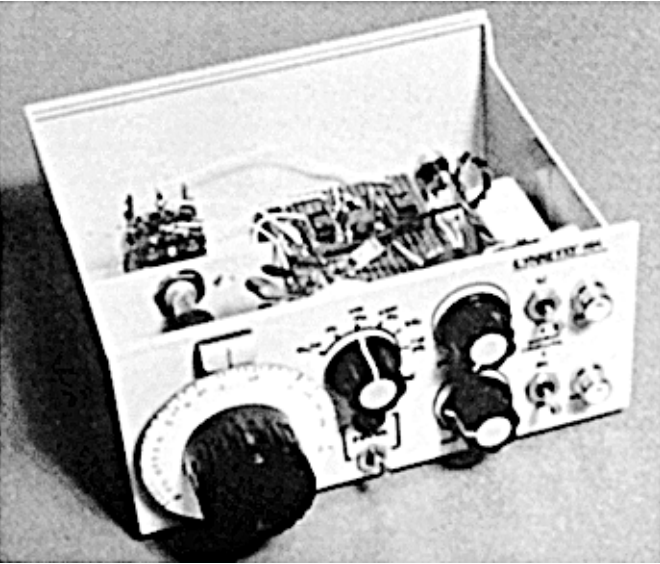
I set my oscillator out on a piece of veroboard, the circuit itself contained on a strip 1" x 2", and included a DC input socket to save on batteries.

## SETUP

There isn't any. All that is needed is to calibrate the dial. I used a 10:1 reduction drive with dial I'd rescued from a very old broken down receiver I salvaged for hardware. I've seen similar drives on sale at rallies for £2.50. Then again, for most purposes there's no need for a calibrated output.



## THE LYNNE 555



**COMPONENTS**

- R1,2 100K
- R3,4 4K7
- R5,6 100R
- R7 390R
- VR1 1M dual linear
- VR2,3 470R linear
  
- C1,2 10n
- C3,4 100u 16V elec
- C5,11 2.2u
- C6,12 220n
- C7,13 22n
- C8,14 2.2n
- C9,15 220p
- C10,16 22p
  
- D1,2,3,4 1N4148
- D5 LED
- IC1,2 555
  
- S1 SPST
- S2,3 SPDT
- S4 2P6W

**THE LYNNE 555**  
Ken Ruiz G4SGF/ZB2M

Box feet, mounting hardware, PP3 clip, DC input socket, phone sockets, knobs

# THE OSTS 40M TRANSCEIVER

Simon Baldwin G0FRD

This project started as an experiment to see how few components were required to build a transceiver. The design goals were:

- 1) Maximum functionality - sidetone, keying to ground, automatic changeover
- 2) Minimum component count - how few parts does it take to achieve the above?
- 3) Easy reproducible - little adjustment, few tuned circuits, and commercial inductors where possible, operation from 12v. nominal.
- 4) Fit in a small surplus box left over from another project !

After some considerable fiddling with the breadboard, the circuit shown evolved. IC1 forms the direct conversion receiver, with oscillator injection from IC3A/B, and D3 as detector. IC3C/D key the oscillator into PA TR1 for the transmitter. IC2 provides the sidetone.

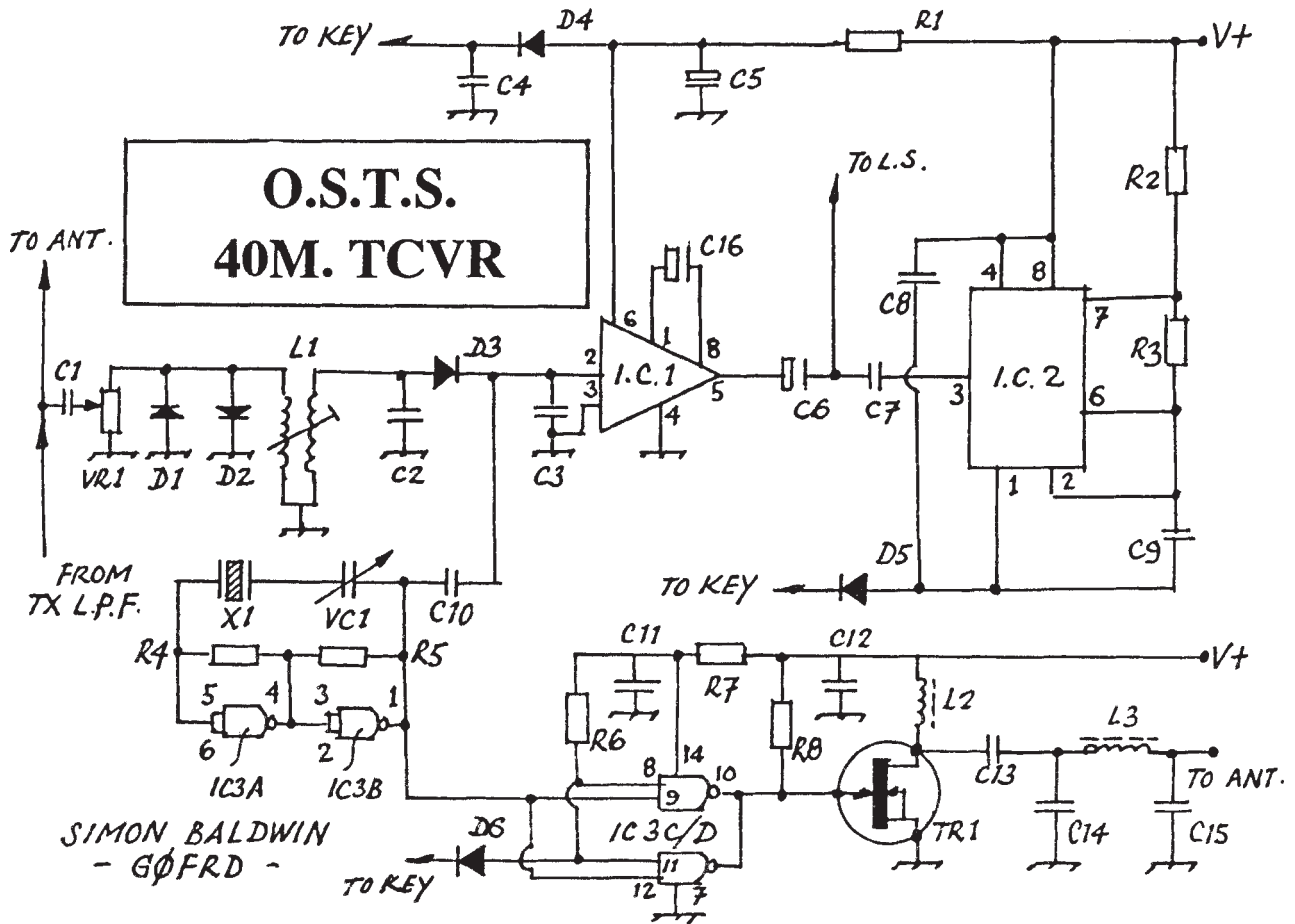
Purists will soon spot that several shortcuts were taken in the design. The single diode detector is about the minimum that can be used here. Receiver muting is by 'shorting' IC1 supply with the key, from R1 via D4. This works relatively well, but C5 is a compromise value between instability in IC1 and keying thumps from the receiver - 10u seemed about right. IC3 is supplied with 5v. through R7. Finally, the outputs of IC3C/D are pulled up to 12v. by R8 to increase the drive to TR1 - hardly recommended design practice but it seems to work OK.

Layout is fairly non-critical, but keep decoupling capacitors C5, C8, C11 and C12 near their respective active components. If the sidetone is too loud, reduce C7. Receive performance is adequate, though does not give room-filling audio (if theres space, a small audio preamplifier might be worthwhile before IC1). R8 may be increased to decrease the power output - with 1K, I get just over 1 watt. With a bit of fiddling I managed to get the whole transceiver in a box 3" x 2" x 1", and not a surface-mount component in sight.

Finally, why the name? As usual, the project started with a box which was basically One Size Too Small !

## OSTS PARTS LIST

D1-6	1N914	R7,8	1K
C1	22p	VR1	1K lin.
C2,3,10	100p	VC1	50p
C4,7,11,12	0.1u	L1	KANK3334
C5,6	10u	L2	Ferrite Bead threaded with approx 12L 30 swg
C8,9,13	0.01u	L3	1uH Choke
C14,15	820p	TR1	VN10KM
C16	10u	IC1	LM386
R1,4,5	470	IC2	NE555
R2	100K	IC3	7402
R3	33K	X1	7030KHz
R6	8K2		

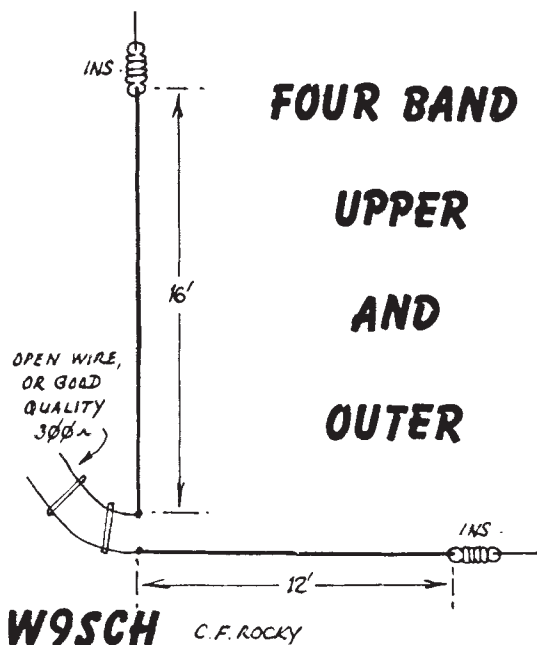


# A FOUR-BAND "UP AND OUTER" ANTENNA

by C.F. Rocky W9SCH

This antenna is a four-band version of my "Up and Outer" previously described in *SPRAT*. It covers 21 to 10 Mhz, and may also give a good account of itself on 28 MHz. It incorporates one important change from the original concept which used equal lengths in both legs. In checking the current in the two legs at the centre of the antenna, using small Christmas tree lamps in series with the two wires, the currents were found to be very much unbalanced. It was immediately realised that this was due to the very big difference in capacity to ground which existed between the vertical leg and the low horizontal leg. The latter was then trimmed until both lamps glowed equally bright, indicating equal currents in the two legs. To achieve this the horizontal leg had to be made 25% shorter than the vertical leg! As the capacity to ground of this leg will vary in different locations, it is suggested that it initially be made longer than 12 feet, then trimmed until equal current is obtained in each leg, using the series lamp method already mentioned. The antenna can be fed via either open wire line or good quality 300 ohm feeder. A balanced atu covering the required bands is essential, one suitable circuit being the "Classic Antenna Tuner" described on page 15 of *SPRAT* No. 59. Using this atu an swr of 1.1:1 was obtained on all bands except 18 MHz; unfortunately I have no transmitter for that band at the moment.

The great advantage of this antenna for those unable to erect a high, horizontal antenna is that it will give much better low angle radiation, and therefore much better DX, than a low horizontal antenna. Although erected close to a wood-frame cottage and surrounded by trees, my version has provided consistent coast to coast contacts on 10 MHz, and many DX contacts to other continents on 14 and 21 MHz, despite the very poor summer conditions we have been experiencing here in the USA. Note that if you are really stuck for height and space the top 3 feet of the vertical portion can be bent over at rightangles, and the horizontal portion can be bent even more drastically without any serious effect on performance.

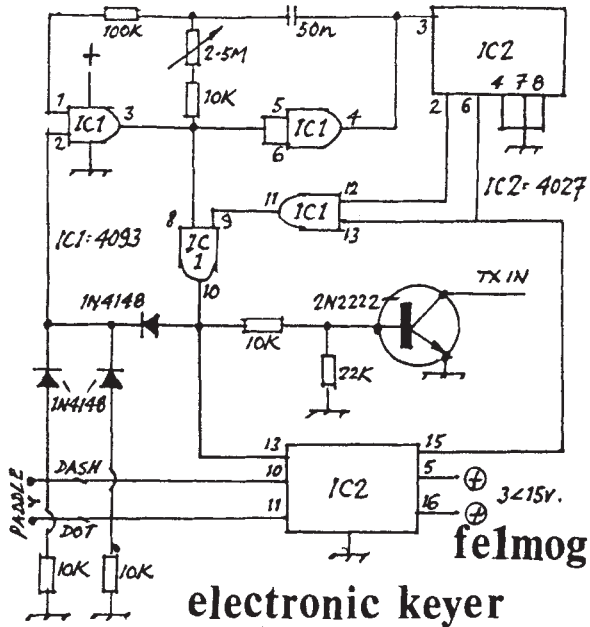




**ELECTRONIC  
KEYER  
USING ONLY  
14 PARTS**

Pierre  
Fillinger

FE1MOG



The diagram shows the keyer I use with only 14 components! That was not enough to develop a PCB, I just used veroboard. The unit is very small, and it is possible to glue one IC on top of the other to make it even smaller! Any voltage between 3 and 15v will work. I use a standard 9v battery, the current consumption is very low and I do not have an off switch. The battery and electronics are housed in a small plastic box. The common point of the paddle is hooked to the positive voltage.

If you have a twin paddle, which can be squeezed, the keyer will alternate dot and dashes alone, to save wrist movements and speed up QSOs! The variable resistor is used to adjust the speed. It can be adjusted from very low to very fast speed. If you need to tune the antenna just set the variable resistor at full speed to obtain a tone. On the other hand you may just have a step between dot and dashes if the VR is set on low speed!

**WE REGRET TO ANNOUNCE THE DEATHS OF THE FOLLOWING MEMBERS:**

Paul Porloo, ON4PQ, 711 (aged 90), Reg Lever, G8QS, 6041, Fred Price, G0FFO, 4551, Ron Wratten, G2JV, 3594, and extend our sympathy to their families and Amateur Radio Friends.

**QRP EQUIPMENT WANTED FOR INDIA:**

The Bangalor Amateur Radio Club, with some 200 members, is interested in obtaining any QRP items as donations. Contact: Nagesh Upadhyaya VU2NUD, PO Box 5624, Bangalore - 560 010. India.

**AGCW WINTER QRP CONTEST : 1st COMPLETE WEEKEND IN 1992**

For Complete Rules : See SPRAT 65 or December QRP Column in RAD COM or send an SAE to G3RJV Contest Manager: Dr. Hartmut Weber, DL7ST, Schleiserweg 13, D/W-3320 Salzgitter, Germany.

**NOTE:** The Tynside Rally [see last SPRAT] is brought forward to February 29th 1992.

## A MESSAGE FROM G4HYY

### SUBS STATUS

Thanks again this year to all the members who have paid their subs early and helped to get some of the work out of the way before the big rush!

Please remember that we do not send receipts unless we receive a stamped addressed envelope along with your subs. Your receipt is the updating of the date code on the address label of Sprat. We do sometimes make mistakes!!! If you think there is a problem please write --- BUT an SASE please!  
Do remember that Sprat labels are printed 4 to 5 weeks before posting date so there is a time lag before the code is updated.

I am afraid that I have decided it is time to retire from this job. The past four years have been most enjoyable. It has been a pleasure to be responsible for the membership records during a period when the active, "paid up" membership has increased from about 2700 to approximately 4000. It has also been a great pleasure to meet so many of you, if only by letter or phone. Unfortunately, this job has become more and more time consuming as both the membership and the rate of enrolment have increased. Pressures of work and on the personal front have led me to make the decision to retire. I hope now to be able to get back to a little construction and even a bit of operating! No doubt I will meet a number of you on the air or at the October Convention or maybe at the NEC.

Details of the new Enrolments Officer and other changes are to be found elsewhere in this copy of Sprat.

May I take this opportunity to wish you all the Compliments of the Season and a very Happy New Year 1992 and to thank you for the help, support and friendship which I have received over the past four years.

David G4HYY

### IMPORTANT ANNOUNCEMENT

#### CHANGES IN OFFICERS.

David, G4HYY, who has acted as Membership Secretary for the past four years, has decided that he must resign from at least part of the job.

The position of Enrolment Officer has been taken up by John Leak, G0BXO. He will deal with all enrolments from 1st January 1992.

David, G4HYY, will receive subscription renewals for 1992, until 31st January 1992. From 1st February 1992 all subscriptions should be sent to John, G0BXO.

All information about address and callsign changes should also be sent to G0BXO from 1st January 1992.

G4HYY will continue for the time being to deal with the data-base in co-operation with G0BXO and G4HYY will print the address labels for Sprat.

FOR SALE : UNIDEN 2020 HF Transceiver, Valve PA, sim. FT101, Needs work, good project, complete with PA valves and manual. £30 + postage. G4HYY [0706] 817851

# AN 80 METRE PHASING RECEIVER

John Young G7BCJ

This phasing receiver though a little more complex than a simple direct conversion receiver, really is worth that little extra effort. As its name implies, this receiver phases out the unwanted sideband giving single sideband reception. Very often one switches to the other sideband only to find a station so strong that reception of the wanted station would have been impossible on a simple direct conversion receiver with its audio image.

1% resistors and capacitors are used in all positions between the mixers and the sideband select switch. Suitable components are available from Maplins.

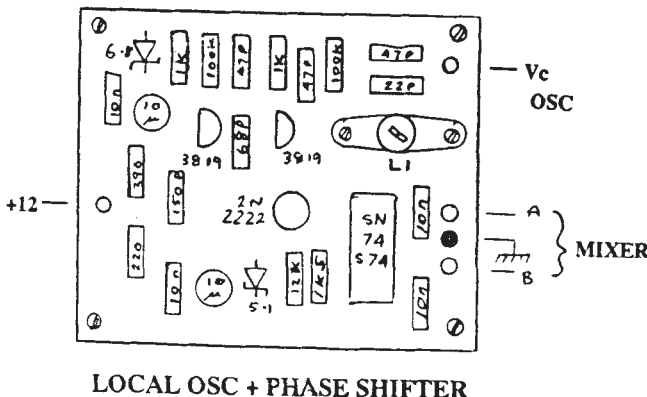
The receiver comprises an RF amplifier, a twin diode mixer, a pair of low noise amplifiers driving the phase shift networks and FET buffer inverters, the outputs of which are selected by the sideband select switch. An FET and an IC form the audio output amplifier.

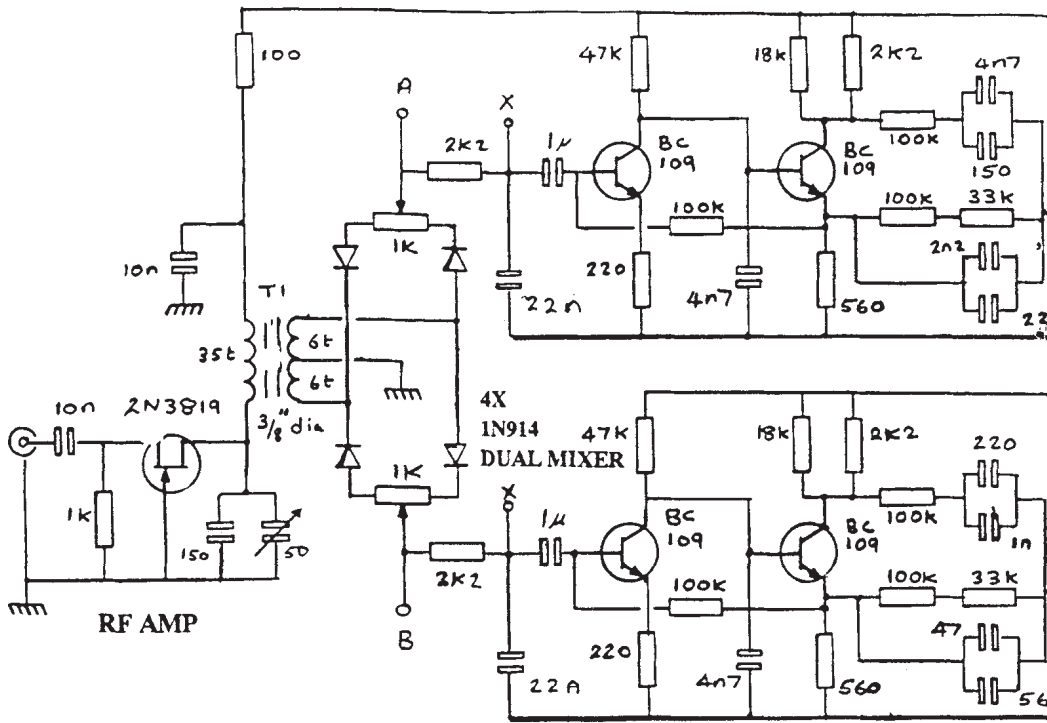
The local oscillator runs at 14.0 - 15.2 MHz and is divided down to 3.5 - 3.8 MHz by the action of the digital phase shifter. The use of a digital phase shifter means that the required 90 degree phase shift is maintained over the whole of the tuning range of the receiver. Simple RC phase shift networks could be used but these are only accurate at one frequency and will result in sideband suppression falling as one tunes away from this frequency.

There is no block AF filter as filtering is done at various stages throughout the receiver.

The receiver is very easy to set-up. Using a frequency counter or communications receiver set the L.O. to 14MHz. Connect a voltmeter between point X and ground and adjust the mixer pot for zero voltage. Do this to both halves of the mixer. Connect the antenna and peak up the RF amp. Tune in a station and switch the sideband selector switch and null the residual signal by adjusting the 4K7 pot. Tune in the station again and switch to the other sideband and null the other 4K7 pot.

## G7BCJ Phasing Receiver

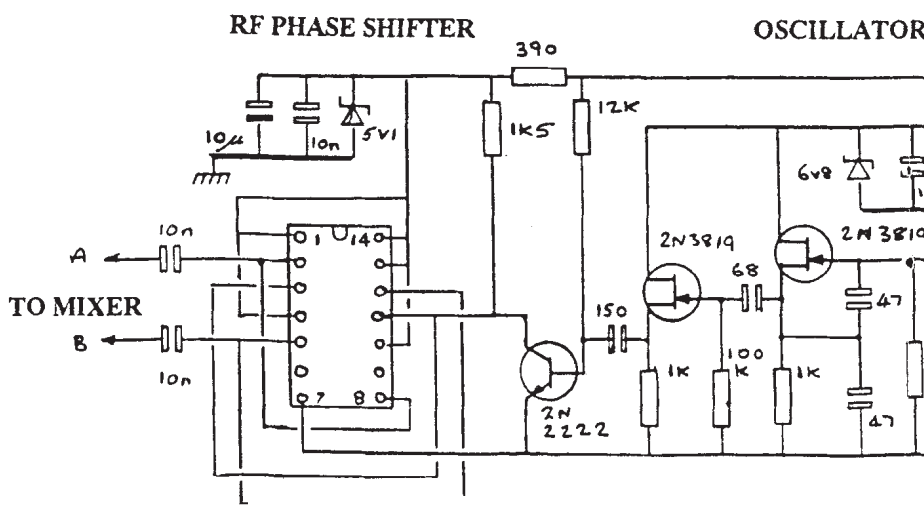




RF AMP

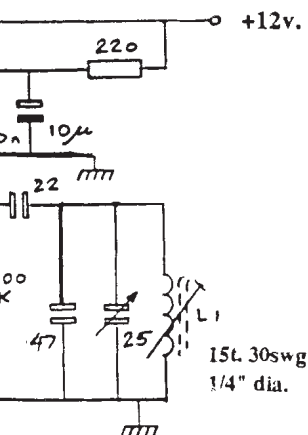
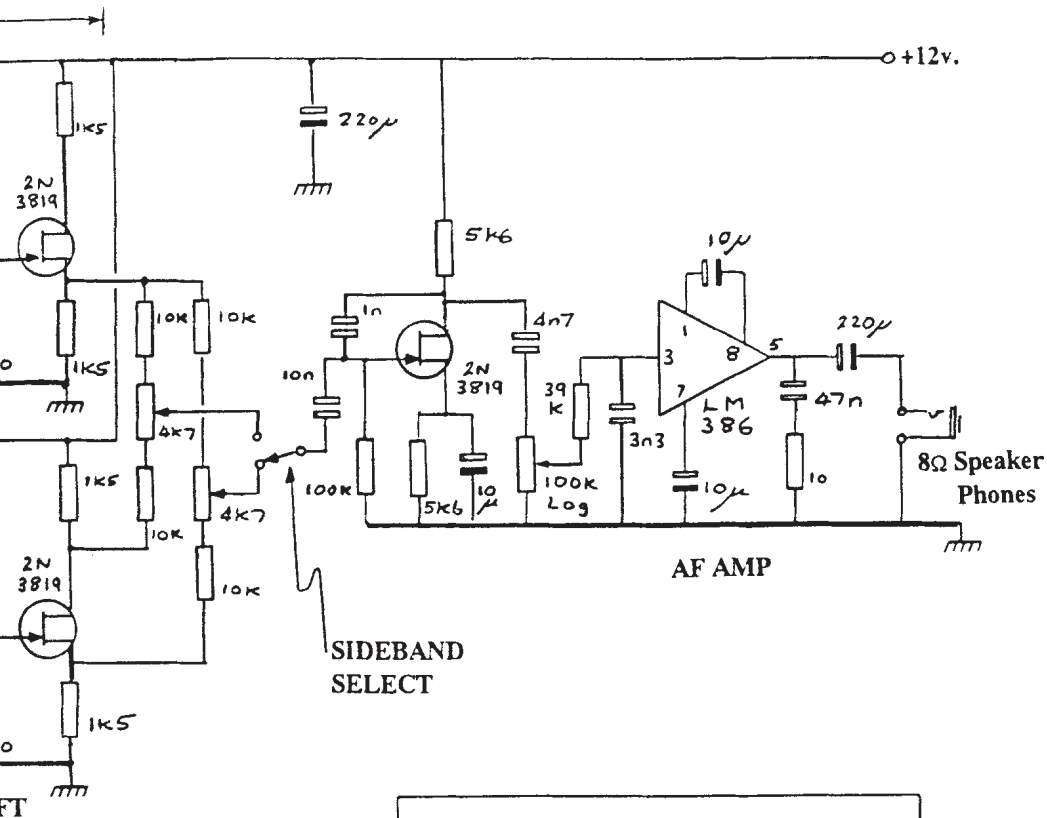
AF PRE-AMP

AF PHASE SHIFTER



RF PHASE SHIFTER

OSCILLATOR



**G7BCJ**  
**Phasing Receiver**  
**3.5 to 3.8MHz**  
**John Young G7BCJ**

# UK MEMBERS : READ THIS !

THIS TIME PAY YOUR SUBS BY STANDING ORDER  
FORGET ABOUT YOUR RENEWAL BY USING THIS FORM  
HOW TO COMPLETE THE FORM:-

1] WRITE IN THE NAME AND BRANCH OF YOUR BANK WHERE IT SAYS:

"----- Bank"  
"----- Branch"

2] GO TO THE BOTTOM OF THE FORM AND ADD:

NAME OF YOUR ACCOUNT IN THE BOX: "Account to be debited"

NUMBER OF YOUR ACCOUNT IN THE BOXES: "Account Number"

ADD THE DATE AND SIGN (BOTH Signatures for a joint account)

MOST IMPORTANT :-

PUT YOUR CLUB NUMBER IN THE BOX MARKED "Quoting The Reference"

T A K E T H E F O R M T O Y O U R B A N K

To **National Westminster Bank PLC** 

Bank

Branch

## Standing Order Mandate

Bank	Branch Title (not address)	Sorting Code Number
National Westminster Bank	ROCHDALE	01 -- 07 -- 44
Beneficiary's Name		Account Number

Please pay

**G QRP CLUB NUMBER 1 ACCOUNT**

0	4	1	0	9	5	4	6
---	---	---	---	---	---	---	---

Amount in words

**FIVE POUNDS**

£	£5.00
Date and amount of first payment	15/1/92 £ 5 - 00
Date and amount of last payment	-----£-----

Due Date and Frequency  
**ANNUALLY ON  
JANUARY 15th**

† the sum of  
commencing  
\* until  
quoting the  
reference

and thereafter every  
\* until you receive further notice from  
me/us in writing  
and debit my/our account accordingly

Please cancel any previous Standing Order or Direct Debit in favour of the beneficiary named above under this reference.

Special instructions

Account to be debited

Account Number							
----------------	--	--	--	--	--	--	--

Signature(s) \_\_\_\_\_ Date \_\_\_\_\_

- Note:** The Bank will not undertake to:
- (i) make any reference to Value Added Tax or other indeterminate element
  - (ii) advise payers address to beneficiary
  - (iii) advise beneficiary of inability to pay
  - (iv) request beneficiary's banker to advise beneficiary of receipt

\* Delete if not applicable

† If the amounts of the periodic payments vary they should be incorporated in a schedule overleaf

# SUBSCRIPTIONS ARE NOW DUE

YOUR SPRAT LABEL TELLS YOU YOUR CURRENT STATUS  
REFER TO THE MEMBERS HANDBOOK FOR METHODS OF PAYMENT

=====

**PLEASE NOTE** : SOME MEMBERS CAN NOW PAY IN THEIR OWN COUNTRY  
THIS APPLIES TO MEMBERS IN : USA, GERMANY, FRANCE, THE NETHERLANDS

=====

FOR DIRECT PAYMENT TO G4HYY PLEASE USE THE FORM PROVIDED

[PLEASE NOTE THE NEW ADDRESS FOR G4HYY]

[UK MEMBERS CAN PAY BY STANDING ORDER : FORM OVER PAGE]

=====

## SUBSCRIPTION RATE FOR 1992:

A) PAYMENTS MADE DIRECT TO UK:

UNITED KINGDOM £5.00, DX [inc Europe] \$12 (CASH), \$14 (CHECK)

B) PAYMENTS MADE IN GERMANY, FRANCE, THE NETHERLANDS, USA.

SEE LIST IN THIS SPRAT [TWO PAGES ON] FOR LOCAL RATES AND ADDRESSES

THIS APPLIES ONLY TO PAYMENTS MADE TO THE LOCAL CLUB REPRESENTATIVE

=====

*Please clip this form to your cheque etc.*

MEMBERSHIP NUMBER \_\_\_\_\_ CALLSIGN \_\_\_\_\_

SURNAME \_\_\_\_\_

NAME USED ON AIR ( IF NOT IN MEMBERS LIST) \_\_\_\_\_

ADDRESS ( IF DIFFERENT FROM THE ADDRESS ON THE LABEL OF SPRAT)

NUMBER AND ROAD \_\_\_\_\_

TOWN \_\_\_\_\_

POST CODE \_\_\_\_\_

COUNTRY \_\_\_\_\_

ANY OTHER CHANGES ? \_\_\_\_\_

PLEASE WRITE YOUR NUMBER AND CALLSIGN ON THE BACK OF YOUR CHEQUE

FOR THE U.K. SEND TO :- T.D.JACKSON, G4HYY, 11 WELLFIELD TERRACE,  
TODMORDEN, LANCS, OL14 6LU , ENGLAND.

FOR PAYMENT IN U.S.A.; FRANCE; GERMANY; THE NETHERLANDS; SEE ADDRESSES  
IN SPRAT 69 AND THE MEMBERS HANDBOOK.

=====



## SUBSCRIPTIONS BY DIRECT OVERSEAS PAYMENTS

### U . S . A .

Payment can be made in the U.S.A. via the QRP ARCI.

Payment by this method costs \$12.00

CHECKS should be payable to QRP ARCI.

They should be sent to:

Luke Dodds W5HKA, 2852 Oak Forest, GRAPEVINE, TX 76051

Luke will forward the subs and all information to the officers in the U.K.

Members MUST give their G QRP CLUB NUMBER and CALLSIGN.

### GERMANY

Für unsere Mitglieder in Deutschland:

Es ist künftig möglich, dass Sie Ihren Clubbeitrag in D-Mark überweisen können. Zuständig ist Rudi Dell, DK4UH. (G QRP 2901). Er wird die Sammelüberweisung und alle dazu notwendigen Informationen nach England an David G4HYY vornehmen. Falls Sie Fragen haben wenden Sie sich bitte an Rudi (Tel. 06324/64116 oder QRL 0621/6071098). Änderungen z.B. der Anschrift oder des Rufzeichens teilen Sie ihn bitte ebenfalls mit.

Den Beitrag ab 1. Januar 1992 ist DM 18.00.

Bitte überweisen Sie Ihren Clubbeitrag für 1992 bis spätestens 31 Januar 1992 auf folgendes Konto:

Postgiroamt Ludwigshafen

Bankleitzahl-NR 545 100 67 Konto NR 232491-672

Rudi Dell - Sonderkonto  
Weinbietstr. 10  
W 6737 Böhl-Iggelheim

Bitte geben Sie unbedingt an: Ihre G QRP CLUB NR.  
und Ihr Rufzeichen.

### THE NETHERLANDS

Nederlandse leden kunnen voortaan hun lidmaatschapsgelden storten op:-

GIRO 2730858, T.N.V. HALPIN, HENGELO.

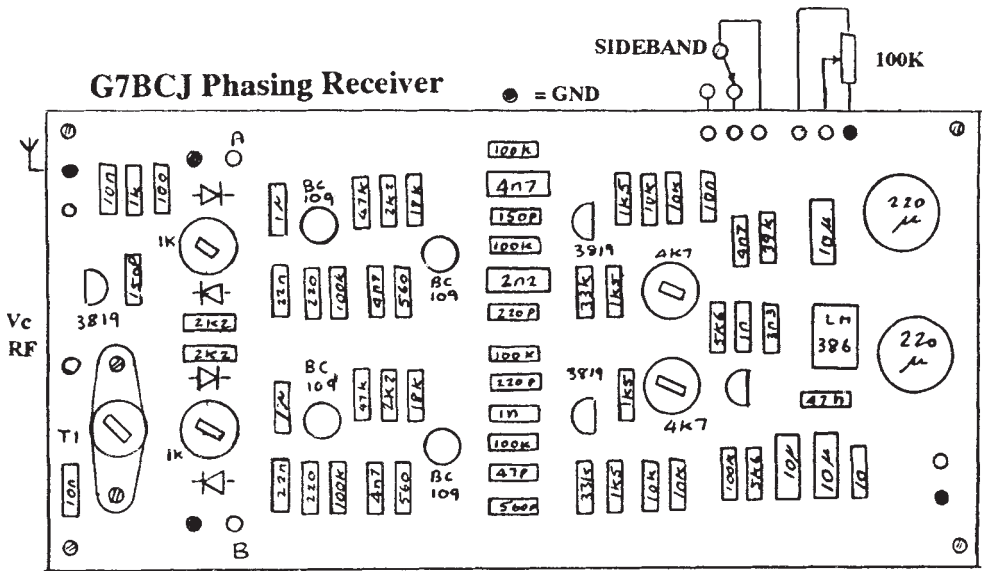
ALTYD Uw call en lidmaatschapsnummer vermelden.

De contributie voor 1992 is vastgesteld op HFL 21.50.

LET OP!!! Stort Uw hydrage voor 28 Feb' 1992 geld ontvangen na deze datum en/of stortingen zonder vermelding van call en lidmaatschapsnummer worden onder evt. aftrek van gemaakte kosten terruggestort. Voor meer informatie bel Peter, PE1MHO. 074-771832.

### FRANCE

As stated in the Handbook French members can renew via Paul Bel FB1MQO 14 Ave de Rodez, Carmaux, 81400. France. The rate is 81.40f.



RF AMP MIXERS PREAMP AF PHASE SHIFT SIDE BAND AF AMP  
SELECT

## W1FB's QRP NOTEBOOK

[Second Edition] A.R.R.L. ISBN: 0-87259-365-7 \$10.00 in the U.S.A.

I hesitate to write words upon a book that I have only had for a few days but by the time the next SPRAT appears, this new edition of the popular QRP NOTEBOOK will be in the hands of many members. Any book which begins by saying "Don't rely on commercial equipment when assembling your amateur station. Experience the thrill of building transmitters and receivers, and gain valuable experience in the process. Half the fun associated with our grand pastime is based on communicating by radio with equipment we have built" must be worth reading! This new edition is a complete re-write of the first edition of the QRP NOTEBOOK and almost all the practical circuits are new to the book. The book is divided into six sections: An Introduction to QRP, QRP Construction Methods, Receivers for QRP, QRP Transmitters, QRP Accessories and Technical Bits and Pieces.

Each section begins with basic advice of design and construction, including a very useful series of "rules of thumb" for circuit and component choices. It is more than a book of circuits, the designer of many popular QRP projects "thinks aloud" on the page and offers sound advice to the seasoned, or wouldbe, constructor. The book also contains a wide variety of complete projects, ready to build, many including full-sized PCB layouts. These projects offer a full range of buildable circuits to suit most levels of skill. One interesting approach is to include a number of "Universal" circuits: Universal VFO, Universal Direct Conversion Receiver, Universal Superhet Receiver, etc. These universal circuits contain full construction and PCB details and tables of values for a choice of bands.

As we have come to expect with work from Doug DeMaw, the book is well conceived and written in his usual lucid and friendly style. I am still enjoying the book and I hope many other members will share in this enjoyment by buying their own copy. The book is very new, mine was a review copy, but usually the Practical Wireless and the R.S.G.B. stock ARRL books in the UK. The introduction suggests that this book may be the W1FB "swan song" - I hope not.

G3RJV

## CONSTRUCTION : THE KITTEN II BOARDS

Ian Keyser G3ROO

Rosemount, Church Whitfield, Dover, Kent. [0304] 821588

Well, The KITTEN II is nearing completion now as far as boards are concerned and no doubt some of you are itching to get some noise out of the beast. I am sorry that we carried the CSP PA instead of this article, but it is a useful circuit and can be used with the Kitten II.

I hope that the labels on the board layouts are enough to show what is connected to what but all interconnections will be listed rather than drawn as a circuit. There are two advantages of doing this, firstly it saves a lot of room in SPRAT and secondly a tick-off checklist can be kept as these interconnections are made.

Before we think of this it is necessary to talk about the other boards we require prior to completion. Firstly the VFO, this needs to cover between 5 and 5.5 MHz and be STABLE. Its output amplitude should be adjustable from zero to at least 250mV RMS and an IRT facility is more than desirable. The Kanga VFO is ideal.

A Multi channel crystal oscillator PCB is required to provide a stable frequency for each band to heterodyne with the VFO to produce the required local oscillator range from the crystal mixer PCB (Sprat65). There are two options here, the first is the board supplied by Kanga which is less crystals, these can often be found in junk boxes or the units used in the FT101Z are suitable. These are 15 KHz off the exact frequency but by shifting the VFO to tune 5.015 to 5.515 there is no problem. The other alternative is to use the "Premix local unit" PB-2153, for the FT101z and this comes complete with crystals and can be ordered either direct from Japan (very easy indeed) or from SMC as a spare part. The disadvantage with this unit is that it does not have sufficient output to drive the SL6440 properly and an amplifier is required. Mike Hadley G4JXX has designed a suitable circuit and his address can be found on page 23 of SPRAT66.

This will allow the Kitten to be used on all bands but if you want to try on 80 and 20m feed the VFO into the RF board a the set will work and adjustments can be made to the complete receiver.

The other board to consider is the TR control PCB, The Kanga board was designed for this very purpose and provides all the outputs needed to drive the boards. For those who do not require rapid QSK a simple relay control can be used and the output voltages required are 12v receive, 12v transmit 8v receive (derived from the 12v receive) and 6v transmit and 6v receive which must be well stabilised for the IRT circuit. a constant 8v supply is also needed for the multi channel crystal oscillator board and the IF strip.

### Sprat 63, AF PCB Page 30 (connections omitted)

Top pin.... Earth  
Second .... Loudspeaker  
Third .... Earth  
Forth .... Input from Preamp PCB Sprat 67  
Fifth .... Earth  
Bottom .... +12v from Main supply switch

## Sprat 64, RF PCB Page 29

Link "a" to "a"

Link "b" to "b"

RF amp on .... To front panel switch, 0v to activate.

Band 1 and 2 .... To bandswitch, +12v to select

Rx 12v .... Rx supply available to other circuits if required

Tx in .. Dirty Tx signal input from Exciter PCB

Pin to left Tx in... Tx+12v from changeover PCB

Rx in ..... Aerial signal input from aerial relay

Tx out... Top left corner of PCB next to 2K2 preset, output to PA PCB

IF out... pin next to c' of torroid above SL6440 to input of IF amplifier

L/O ... Input from Xtal mixer PCB

## Sprat 65 Six Band Crystal Mixer page 35

Xtal.... signal input from multi channel crystal osc PCB

VFO.. pin adjacent to "a" T1 Input from VFO

+12v.... +12 volts from supply switch

Dial o/p ... signal output to digital dial input.

O/P .... output to receiver mixer (L/O) on RF PCB.

## Sprat 66 page 22 SSB and CW exciter.

Key... to key input jack on front (or rear) panel.

R.F. Sidetone.... output to sidetone input on I.F. PCB.

SSBTx+.... Tx+ supply from T/R control PCB via mode switch to give supply in SSB position only.

This supplies the SSB generator.

C.I.O. .... Carrier oscillator to product detector on I.F. PCB. Fed into Pin 6 of NE602 (crystal and the two 68pf capacitors removed)

+12v USB/LSB .... +12v from USB/LSB on front panel.

ALC volts .... ALC voltage input if ALC circuit installed

Exciter output .... 'dirty' Tx output to RF PCB for filtering and amplifying.

Xtal mix VFO input. ... L/O input from Xtal mixer VFO PCB which also drives the RF PCB.

Tx+ .... Tx+ supply from T/R control PCB

---

**FOR SALE:** HW8 Transceiver with S/Drive Mod. case a little tatty but otherwise good order, with handbook and Hotwater Handbook. £100 ono. Jim Harrison G0NTR, 43 Churchfield Court, Walton, Peterborough, Cambs. PE4 6GB.

**FOR SALE:** In mint condition and fully serviceable - ERA MICROREADER MKII (also inc. Morse Tutor) £100 + postage. Ring Tony [G3HNP] Gt. Yarmouth [0493] 393560.

**FOR SALE:** Large Stock of Valves, some vintage, many new and boxed. All Proceeds to Royal Free Hospital. SAE for lists. G3ASV QTHR. Tel: 081 455 2437.

**WANTED URGENTLY :** MIZUHO MX-14S Handheld Transceiver, Write or telephone (collect - reverse charges) Bill Ruppert WB9BQG, 334 Taft Ct. Glenview, Illinois 60025, U.S.A. Tel: 708-998-9802

# QRP COMMUNICATIONS FORUM

Gus Taylor G8PG 37 Pickerill Road, Greasby, Merseyside, L49 3ND

**EUROPE FOR QRP WEEK-END ; PRELIMINARY REPORT.** The event seemed to be very well supported, especially from OK, UA and HB. At least 20 countries in 3 continents are known to have been active, and there may have been more. Conditions on the Friday seemed very good, with OK milliwatt stations workable from the UK on 7 MHz. Late Saturday afternoon produced a useful opening to the USA on 28 MHz with good signals (KB1FK and G8PG were ragchewing at S7/8 with QRP at both ends). Serge, RA9CEI, did a great job although his signals were down on their usual strength. There were just too many OKs to give individual mentions, but one must mention OK5SLP/P, which was the OK QRP Club HQ station operated by Pavel, UK28MA, using his famous "HWM8", a home-made copy of the HW8. Petr, OK1CZ, was unable to operate OK5SLP, as he had to go to Greece on the Saturday, though he did manage a couple of hours in the event on the Friday. RV3GM, Secretary of the UA QRP Club was also active. One must also mention FE1MOG doing a great job for France, and HB9s AMZ and DAX. Zen, SP5SDA was also wielding a mean 1w. Sorry no Gs mentioned, but obviously one could not hear them in the UK, but some pretty big guns were firing from our direction. Often one can bet fairly accurately on the winner in an event like this, but this time I think it is wide open and we will have to wait for the official results. One thing that can be said was that it was terrific to hear all those good QRP signals coming from areas as far apart as the Urals and West of Ireland, and to know that all the operators concerned were having fun. And it was environmentally friendly, without causing all the QRM to others that an Liberian event did for part of the week-end. (Any bets on a crafty Scandinavian slipping into the lead spot? They too were out in force!)

**POWER ON QSL CARDS.** Once again several members have asked me to remind you to PLEASE put your power on your card. Without it the card is useless for several Club awards.

CT/G3KJX/P operation was enjoyable for Brian, but often spoiled by a couple of QRO Gs who insisted on using 060 and ignored calls telling them QRP operation was taking place. Both were OTs sadly.

**RE DESERT STORM,** mentioned in our last issue, Skip, WB8OWM, has written to say that electrical storms in his area produce enough static electricity on his antenna to light neon lamps. Fit that static leak!

**THE BILAL STORY** is no longer a mystery thanks to a large information pack provided by Luke. W5HKA. Actually Bilal is the name of the inventor/manufacture of the antennas, which are marketed as "Isotron" antenna. They are a series of very light and compact single-band antennas covering the non-WARC bands between 1.8 and 28 MHz, and fed via 50 ohm co-axial cable. The largest is the 80m version and even it is only 32 x 16 x 15 inches, with a weight of 6 lbs. Surprisingly the 1.8 MHz version is only 16 x 1 1/2 x 4 inches and 1 1/4 lbs. Claimed bandwidths (to 2:1 swr points) are approximately 100 khz on 1.8 and 3.5, and full (European) band coverage above that. All the antennas are lumped constant antennas, consisting of a series tuned resonant circuit which is physically large enough to radiate efficiently. On the three lf bands this circuit consists of two large, V shaped metal plates one mounted inverted above the coil, and one below it. These plates form the tuning capacitor, and provision is made for varying the capacitance to bring the antenna into resonance. A co-axial socket for the feeder is connected between the lower end of the coil and the bottom capacitor plate ; the coil is mounted vertically. On 14 MHz and above the antenna consists of a long, horizontal coil with a capacitor plates at one end, and a connection to the co-ax connector at the other. The other side of the connector goes to a pivoted arm which carries a second capacitor plate. Moving this arm allows the antenna to be resonated. All versions are horizontally polarised, and therefore height dependent, but all are small enough to mount on a TV chimney mast without attracting undue

attention. Various test reports from "73" and "CQ" magazines indicate that even at modest heights the antennas perform amazingly well for their small size. Basically these reports say that under reasonable/good conditions there is little difference when compared with a dipole, but under poor conditions signals are 1 to 2 S-points down. Prices range from 150 dollars for 28 Mhz, U.S. carriage included. It is not clear whether overseas export of single antennas is available, but an alert U.K. Trader might do himself some good by investigating bulk import possibilities. All further enquiries to Bilal Co. 137 Manchester Drive, Florissant, CO 80816, USA, and not to G8PG. (Ralph Bilal is WD0EJA). Thanks also to George, W0AV, who sent a Bilal brochure, as did G0??? whose letter has become detached from his brochure. TKS OMs.

### **REPLACEMENT SCOTTISH EXHIBITION MANAGER REQUIRED**

The Club invites applications from members resident in Scotland for this post, which has been held by GM3RKO/G8PG for the past five years. The requirement is for a car owner, ideally with some typing capability, to assume responsibility for our stand at the annual Scottish Amateur Radio Convention; if he so wishes the Manager may also arrange representation at other suitable Scottish events. Some stand material is already held at Glenrothes, and more can be made available. The Manager would be able to claim reasonable out of pocket expenses for travelling, materials etc. For further details contact G8PT at the address given below.

A D Taylor, G8PG, Pickerill Road, Greasby, Merseyside L49 3ND

**MY WARNING ABOUT ABUSES** of the data system has unfortunately proved to be only too correct. Already more than half the work of the RSGB Official Observer service is devoted to data system abuse. In Cyprus, where the data box licence is trying to keep his box clean to avoid the facility being withdrawn by the Cyprus Government, he has been subjected to a stream of threatening, intimidatory and slanderous messages input from overseas. It seems that the mindless, moronic minority in our hobby have seized on the data facilities as a new way to express their hooligan mentality. The problem is that these people are placing the whole future of amateur radio in jeopardy, and placing an enormous amount of ammunition in the hands of those who would like to take over our bands for other purposes. What is needed is immediate, hard action to discourage such behaviour. A few licence revocations by the UK Authorities would be a good starting point.

**DO NOT FORGET** the Winter Sports, 26th December to 1st January on all QRP frequencies. This is our great annual get together and friendship renewal event. Old hands will need no further reminder. New members will find themselves in for a treat, and an opportunity to work new countries on two-way QRP. But please move upto 3570 between 0600 and 0800 each day to give the trans-Atlantic two-way QRP contacts as little unnecessary QRM as possible. This is for local /EU contacts, of course. If you are after the DX listen around 3560. Such contacts are made each year, and you could be one of the lucky people to do it!

**SARCON 1991.** This year the event was held in Dundee, and very well organized with all special interest group stands such as ours located in the entrance hall where they could be seen by everybody. More than 40 members signed in at the stand, a number of new members enrolled, others renewed, and sales were extremely good. Thanks to imports from the Dayton hamconvention we were able to offer some tasty semi-conductors at prices which made passing Traders turn white! As usual we were the only stand exhibiting home brew equipment. This included the new 100 mW wonder from GM3OXX (See this SPRAT), a couple of superbly made items from Chris, GM4LYN, and a neat ONER from GW4KUS. As for the past 5 years, Nor, GM3RKO did a sterling support job in his usual quiet efficient way. The one sour note was being charged admission at the door after being invited to the event and having travelled 250 miles to attend. Not the Scottish hospitality to which we have become accustomed in previous years, but in fairness the voice demanding the money appeared to have an English accent!



**KANGASKI RADIO?** Oleg, RV3GM, announces that he will shortly be setting up his own amateur radio supply business selling kits, components, etc, Good luck with it Oleg.

**DESPITE NON-COOPERATION FROM THE NATIONAL SOCIETY AND AN ATTEMPTED POLITICAL COUP ONLY THREE DAYS EARLIER** the U QRP CLUB Anglo-USSR QRP Contest went ahead as planned on 24/25 August. Failure of the CRC to publish advance news of the event meant that many U QRP stations were unaware of it, but stations such as RA9CEI, UF 6VAI, UA3EAC, RV3GM and his XYL Olga operating UZ3GXX did sterling work. There was also great support from the rest of Europe. For some reason not yet known, EK9QRP/8 who had been very active from UI8 a couple of days previously failed to show, but we believe that UZ3GXX will count instead. At least 18 countries were active on QRP during the event.

Considering the very, very difficult circumstances under which the as yet embryo U QRP Club is operating the event must be considered a success. Hopefully it can be repeated next year, dates suggested to our Russian friends being 22/23 August, 1992. A fuller report will be published later.  
Bolshoe spacibo Oleg! ( The 1992 dates now confirmed).

**QRP CALENDAR FOR 1992 APPEARS ELSEWHERE IN THIS ISSUE.** Please stick it up near to your rig.

**CHANGES TO CLUB AWARDS.** Starting in 1992 the following changes will be made regarding Club Trophies. The G2NJ Trophy will be awarded annually for outstanding services to international QRP. The Suffolk Trophy will be awarded annually for the best technical (non antenna) article published in SPRAT during the year. The Committee decides on these awards; no applications are required. In place of the Suffolk Trophy a QRP Day Plaque will be awarded for the best international QRP Day (17th June) log. The rules will be as for the Suffolk Trophy previously. Please amend your Members Handbook to reflect these changes.

AN ERROR appears in Rule 4 of the General Rules for Awards on page 24 of the current Members Handbook ; "three 19p stamps" should read "three first class stamps".

#### **AWARD NEWS.**

Congratulations to all the following.

QRP WAC. G0NEZ, DL7GK, G0NDI, G4AWT.

QRP COUNTRIES. 125 G0IFK; 50 GM0DHD, DL7GK.

WORKED G QRP CLUB. 720;G4JFN (Nice Bob!), 600;G3XJS, 280;G4XVE.

240; G3FCK, G4CFS, G3INZ. 200 GM40SS. 160;G4NBI, 140;GM4IJG.

100;G0KCA, GM0DHD. 20;FB1LDX.

TWO-WAY QRP. 50;G4JFN (Nice work), 40;G2DAN. 30;OH9VL (all mW), G3INZ. 20;G4UNL. 10;G0NEZ,G0NDI.

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**WANTED:** HW8 or HW9, pref. in Kit Form. Des. G8SBU [0395] 265059

**WANTED:** Collins TCS-12 TX/RX for spares, Also nay accessories and info on PSU construction. Julia Wye on 071-385-1244 ext. 2485 or G0OKY QTHR.

**THE G4LEG BARGAIN LIST:** Send a SASE or two stamps to Peter Brent, G4LEG, 14 Stagelands, Crawley, West Sussex. RH11 7PE.

**WANTED:** Ten Tec Century 22, Century 21 or Agonaut 515, must be in working order

**FOR SALE:** SEM Multifilter Audio Filter. As New. Noel Cameron, EI4DZ, 16 St. Mary's Crescent, Westport, Co. Mayo, Eire.

# QRP CALENDAR FOR 1992

- 1st January Last day of 1991 Winter Sports. Logs to G8PG by 15th February.
- 5th February Last date for submission of Chelmsley Trophy logs to G8PG.
- 29 February/ OK/G QRP Weekend. Work lots of OKs.
- 1 March Rules elsewhere in this issue. Logs from G stations to G8PG  
15th April
- 17 June QRP Day. Plaque to be awarded.  
Logs to G8PG by 17 July.
- 22/23 August Provisional dates for U QRP Club Contest. Watch SPRAT for details.  
Rules later ; logs to be in by 15 October.
- 26 December /
- 1st January, 1993 Winter Sports. Maximum activity all QRP frequencies.  
Please leave 3555 - 3565 kHz clear for DX working  
0600 - 0800 daily. Move up around 3570 for local work at these  
times. Logs to G8PG by 15th February. Any other special WS  
activities will be announced in SPRAT.

## OK/G QRP Weekend Rules

1. Contacts. These must be between G and OK QRP stations.
2. Power. The limit is 5w rf cw.
3. Exchanges. RST and power must be copied.
4. Scoring. The score is the total number of OK/G contacts on the bands used. One contact per station per band only to count.
5. Frequencies, times ; 3560 kHz 04 - 0700 and 2100 - 2400 gmt  
7030 kHz 05 - 0700 and 1800 - 2100 gmt  
10106 kHz 06 - 1000 and 1700 - 2000 gmt  
All + QRM. Use best band open to you.
6. Logs to G8PG by 15th April for G entries. OK to OK1CZ.
7. Awards for leading stations will be certificates.
8. Dates 29 February - 1 March 1991.



## NOVICE NEWS

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

We wish the following G QRP Club Novice Members every success in QRP Amateur Radio, and encourage you to continue our Club aims of experimentation, goodwill to all Radio Amateurs and to use your QRP power to great effect. The first Club Novices are;

Doug 2E0AAH; Jon 2E1AAE; Hugh 2E0AAA; Tony 2E1ABX; Frank 2E1ACB; Rowena 2E1AAL; Tasha 2E1AAW; Michael 2E0AAL; Vicky 2E1AAD.

Some Club member have already tried the novice Antenna, and a few have been erected with success. The following notes are intended to help get the Aerial into operation. We first have to assume that a home build or Commercial 3 Watt output rig is available; plus an SWR/Power Meter with an FSD (full scale deflection) of about 10 W.

**The Station line-up should be as follows:**



Quite a layout! But don't worry - it looks more complicated than it is! Bring the Novice Aerial (W3EDP) long wire part into your Radio Shack by means of an insulated feedthrough in a wall or window (if you are a youngster ask your parents permission first!) A 1/2" drilled hole with a plastic sleeved insulator should be okay. Try to have the ATU backed up against the window, and connect the 84' wire to the correct ATU terminal (its a good idea at this stage to solder red and blue banana plugs to your counterpoises for ident). Depending on the chosen band connect the relevant counterpoise to the other terminal. Lets take 3.570Mhz as an example, so connect up the 17' wire and hang it at right angles to the 84' wire outside the window. Next, connect up the equipment as in the above sketch using good quality co axial cable - RG58U is minimum quality, and use PL259/S0239 plugs and sockets they, along with the wire;coax; can be bought quite cheaply at Rallies.

Note that I have included a Low Pass Filter in the sketch; it will ensure that any inadequacies in your Tx are not passed to the Aerial, and can be built from a Kit such as the Kanga LPF costing £4.95.

When you are satisfied that all is well, check it over again. Turn the Drive control on the Tx to zero output. Turn on the equipment, tuning into 3.570 (centre of the Novice 80 Metre section.) Adjust the ATU for maximum background noise using Headphones and listen to see if any Amateurs are already using the Frequency. If not, turn up the Drive control until 3 Watts output is seen on your Power Meter - turn the Meter to the SWR section, and using the ATU get the minimum SWR reading you can. Aim at 1.1, but anything below about 2:1 should be okay. If you are unable to achieve this, experiment with the position of the counterpoise and ATU until you get it right,. It may also involve adding or subtracting the number of turns on the ATU coil, to suit your conditions. In a future Sprat, we will go into actual contacts on the air in more detail, but for now we wish you a great success!!

Recent correspondence has (as always) included requests for information about learning Morse Code. The Club Cassette Tapes are very good costing £3.75 for two C90 training tapes compiled by Gus G8PG; and Studio Produced by Norman G4LQF (See your Members Handbook for further details.) The first Tape takes one to the Novice Test Speed of 5 words per minute, and the second to 14 wpm. Many (including me) have

used them successfully, and a recent letter was received from Chris Fleet (6391) who also used the Tapes to pass his Class A HF licence Test. Chris is now back at Imperial College where he is studying a Degree in Physics. Look out for him operating /P using the HF Colinear on the college roof! His call sign is, as yet, unknown.

During the Summer, Club Officers have decided that the HF Novice calling frequencies will be as follows. Please look around the bands at least once per day for our Club Novices:

<b>Top Band (160 Metres):</b>	<b>1.960 (CW/Phone)</b>
<b>80 Metres</b>	<b>3.570 (CW)</b>
<b>15 Metres</b>	<b>21.130 (CW)</b>
<b>10 Metres</b>	<b>28.130 (CW)</b>
<b>" "</b>	<b>28.360 (CW/Phone)</b>

Finally, I would like to take this opportunity to thank all Club members and Officers for the help given during 1991; and to wish you a Happy Christmas and New Year. I hope you meet you during Winter Sports.

#### **News just in courtesy RSGB:**

188 candidates sat the NRAE in September and 151 passed the written exam resulting in an increase of 100% more Class B novices (Assuming that all apply for a 'B' novice licence RSGB?) Hopefully many will sit and pass the 5 wpm morse test and become Class 'A' novices, When a whole world of international HF communication becomes available.

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## **EIGHTH YEOVIL QRP CONVENTION**

**The Preston Centre, Monks Dale, Yeovil, Somerset**

**[Via Preston Road and Larkhill Road, Maps available from G3CQR, QTHR]**

### **SUNDAY 10th MAY 1992 DOORS OPEN 9am**

**Entrance £1.50, including programme with lucky draw number**

**GB2LOW 2 Metre Talk-in from 8.30am on Channel S22**

#### **THE LUNCHTIME DIVERSION : RECEIVER CHALLENGE : RULES**

You are asked to bring along a receiver you have constructed, using not more than one diode and one three terminal transistor [excluding Darlington Pairs, Transistor Arrays and Integrated Circuits] capable of producing a DC output across a 2000 Ohm resistive load. The receiver's aerial including any supports, formers, frames etc. must be contained in a space whose volume is not more than 2500cc and having no side exceeding 200cm in length. For instance a self supporting rod of 4cm diameter and 198cm long would occupy a volume of 2488cc, whereas a wire 3mm in diameter could be as long as 354m but it must be contained together with supports etc in a space of 2500cc with no single dimension exceeding 200cm.

The receiver will be tested against our 1 watt transmitter connected to a vertical rod aerial 2 metres long and located approximately 50 feet from the receiving position. The transmitter frequency will be 3550KHz +/- 5KHz. The 2000 Ohm load resistor will be incorporated into our voltage measuring equipment and therefore two test points must be provided for connection of our test lead crocodile clips. Two other points must be available for the connection of our regulated 12 volt 5 amp DC power supply. Time will be allowed for the peaking of equipment to optimum performance before the voltage readings across the load are taken. The receiver with the best performance will be the one which produces the greatest change across the load when the transmitter is radiating. In the event of a tie, the transmitter power will be progressively reduced until a winner emerges. A brief description with a circuit diagram of the receiver and aerial and calculations of the dimensions of the aerial must accompany each entry. A prize awaits the winner.

Any enquiries : Peter BurrIDGE, G3CQR, Tel: Sherborne {0935} 813054

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## SSB COLUMN Dick Pascoe G0BPS 2559

3 Limes Road, Folkestone, Kent, CT19 4AU

WOW, was the only comment I could think of after the gathering at Rochdale in October. What a great day for all that attended. The response was staggering to say the least. Many people came up and chatted about low power SSB, It seems that there is interest in this section of the hobby, just very few decide to write letters about it.

One letter from Byron WU2J/4 who has been keeping the bands warm as he travelled all over Florida trying to find a house to suit him and his wife (KE2TH). They spend the summer in a holiday home in France and enjoy the Bands out of Europe.

This travelling has made Byron an *expert* in quick portable aerial construction. He was pleased to pick up an Argonaut 509 for \$150 too.

Staying Stateside, Bill N8ET was happy to be part of one team in the CQWW contest operating from Bermuda as VP9AD, If any members worked that station on 10m, then Bill was there giving it his all.

No other news, except to say that the CSP project seems to be popular with quite a few being built. What a great winter project and its SSB too.

Ian G3ROO has been going great guns on top band, and I have also got my 80m loop working well now. Look out for us on 1930 +- QRM

I was pleased to find a Cushcraft R5 in the Bring and buy at the Holsworthy rally , put in by another member. I have heard great reports on these aerials, so listen out for my (improved?) signal on the bands.

No table again this time, no claims made!

**ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS:ADS**

**FOR SALE:** FT75 plus VFO + AC/DC PSU £125, FT757DX CW Filter £525, FT102 CW Filters + FM £650, SB102 plus PSU & Speaker III but Working £125, FL2100B Linear vgc , 1 hour use since new valves, £395, HW9 Line-up vgc [HW9 + WARC+ATU+SWR+PSU+Speaker] £325 Mizuho 80m SSB Handheld inc nicads £75.

Cantenna Heathkit Dummy Load £10, Heath SWR HM102 £15, Diawa SWR CN620 £50, GDO Loadstar Solid State £25, GDO Heath [valve] £10, Yaesu Speaker SP901 £15, Heathkit Speaker SB600 £10, Heathkit Sine/Square Generator AO-1U £20. Ring Ian G3ROO [0304] 821588.

**WANTED:** MK119 Receiver [1950's SAS] or anything connected with the 119. Ian Haggart, G3JQL, 22 Alnwick Rd. Newton Hall Durham. DH1 5NL. Tel: 091-386-1116.

**INFORMATION WANTED:** for Trio Receiver JR-310. Graham Williams, 44 Mayfield Dr. Buckley, Clwyd. CH7 2PN. Tel: [0244] 549805.

**INFORMATION WANTED:** On mods for the KW2000B inc. IF shift and refurbishment. Tony Tuite, GW0NSR, 22 Gerddi Morfa, Conwy, Gwynedd.

**WRITE TO Y26SW:** Henry, Y26SW, aged 33, two young children, wishes to exchange letters with club members, and arrange skeds. Henry Arndt, Heinrich-Hertz-Str.33, 0-3300 Schonebeck. Germany.

## SPONSORED MEMBERSHIPS

This scheme remains very successful. Quite a large number of members benefit by having their subs paid by others. Usually in countries where radio amateurs cannot obtain convertible currency.

If you sponsor another member and wish to continue the arrangement please send the payment as usual but please note that overseas subs are now £6.00. When you send the payment please make sure that you give me the OTHER member's Club Number and Callsign.

At the moment, at the end of the current membership year, I still have some "spare" sponsor payments.

Please do not worry! I haven't forgotten who has sent extra cash! As payments are used, I inform the sponsor. If you have any queries, check with me. [Please note new address : Centre pages]

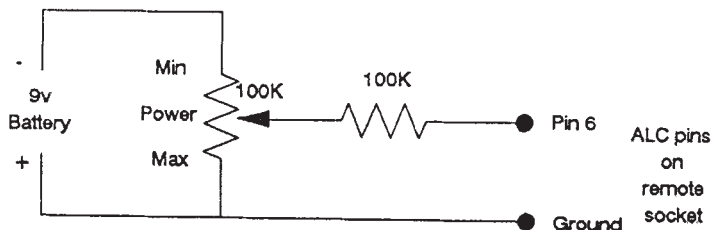
Thanks again to all those who help and have helped in the past.

**G4HYV**

## KENWOOD/TRIO TRANSCEIVERS VARIABLE POWER ADJUSTMENT

**Andy Stafford G4VPM** [Based on Information from Lowe Electronics]

I use the circuit with my TS440S and find it excellent. It enables accurate and STABLE adjustment from zero to full power. I have found turning down the drive control inaccurate with a tendency to creep up. It is a simple job to include a toggle switch in the supply line to enable instant switching from QRO to QRP. The circuit is useful for reducing power for transverter driving (with a changeover circuit if required) and works on SSB too.



### MEET THE REPRESENTATIVE PAUL PIERRE BEL FB1M3QO

Representant pour la France

Paul, our hard working representative in France has put the G QRP club on the amateur radio map in his country. The last time I heard, he had, so far enrolled 183 new French members. His ambition is to make it 200 by the end of 1991. Paul is also active on QRP CW.

# MEMBERS' NEWS



## Chris Page G4BUE

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

If all has gone to plan you should be reading this while the Winter Sports is in progress and if you have been active in the Sports you may have worked GBØQRP. That is me! I actually applied for the special call sign of GB14QRP as this is the 14th annual Winter Sports, but they gave me my second choice, GBØQRP. On a different tact, due to shortage of space in this SPRAT I have not been able to publish the QRP Packet Listing. I will hold all your updates over to the next listing.

GØNMT is trying to find out if anyone has done the layout on a PCB for the JU6 Plus on page 17 of the G-QRP-C Circuit Handbook. John can be contacted via packet @ GB7WRG. G3KJX was QRV from Portugal in October and found the expression "72" being used by many stations. Brian used 5W to a G5RV and a 50ft square loop but his biggest problem was QRO stations using the QRP frequencies. His last QSO was with K3TKS at 559 both ways.

DL8RDS has almost finished building his packet station and as his father has agreed to buy a 286AT computer, he is all set! He met someone at my Summer QRP Party who was a PASCAL programmer and had written a very good terminal program for packet. I cannot think who Marcus is referring to. Can anyone help him? GWØLBI urges members to keep their Club Handbooks close to their rig to save long repeated exchanges of names and club

numbers. Using 1W SSB Leighton worked ZA1HA and some W's with 500mW CW. He has modded his FT747 for a maximum of 5W to make it a true QRP rig.

PE1MHO reports 50MHz still going nicely, but he is getting desperate for an Asia contact. Any takers? Putting up a 4el yagi has done wonders for cracking the pile-ups but Peter reckons a half wave vertical is still ok for DX when no-one's around. All continents (except the exclusive Asia) have been worked with 8W PEP and the vertical. He even won first place in the SMIRK Fall Contest in 1990 with this set-up. AC4AC also operates on 50MHz from VA with 1W to a 2el "Bill Orr" quad. Henry has worked over 1000 miles into FL and the mid-west. He may visit the UK in 1992 and if he can coincide it with one of our social gatherings should be able to meet many members.

G8QM thanks Andy, G4VPM for quickly answering his request for the TS140 ALC mod. Vic says the mod works perfectly and he is now able to enjoy genuine QRP operating again. G3OEP combined his regular "QRP Beside the Seaside" with a vintage wireless exhibition this year. It was very successful, even receiving a mention in the local paper. David is Chief Instructor for the Novice Licence for Norfolk and is awaiting the results of his first five pupils. David says he is so pleased to see the new QRP Section in HF Field Day next year and that it's a great compliment to the G-QRP-Club that we have got the RSGB "back to their roots"!

SM5CCT spent two months working in Washington DC where he was active with his new Argonaut II. Bengt says the new rig has been worth waiting for. I purchased one in October and am in the process of evaluating it. I am most anxious to know of other members who have bought the Argonaut II including what they think about it, any problems they have experienced and any mods they have done to it. I am liaising with WN9A, who is doing the same on behalf of ARCI QRP members, so we can exchange information for the benefit of members of both clubs.

FE6IPN operates mainly on 15 and 20m CW between 0600 and 0830z. After looking for an Antarctica station for ages for his IOTA



award, G3DNF worked three in a row! Gordon worked Y8SPOL, 4K1A and HFØPOL. He has also worked the ZA's and more islands for IOTA. Gordon found the EU QRP Weekend "a bit tough", but managed 52 QSOs. Sad to report the passing of GI3ZAD. Sam was an avid constructor and will be sadly missed by his friends in Belfast. GI4CBG has moved QTH and is now QRV with an FT7 and W3EDP. Roy has plans to erect a large horizontal loop. Harold, GI4SOS is temporarily QRT due to work commitments and Ray, GI3PDN is now a Morse Examiner. GI4NKB has been building as he recently took the decision to have an all homebrew shack. The Kitten II and Omega are Frank's projects so far.

G2BUV has been chasing DX in recent months and in the middle of November his DXCC stood at 90. Ted recently bought one of the cheap 2m hand helds from Raycom and comments on the lack of activity on the band when the local repeater is off the air! ON4KAR sends information about NFD rules in Belgium which include a Class E for QRP but with no antenna restrictions. This year the power level will be 5W output. DJ1ZB has sent information about the situation in Germany where there is a 25W QRP Class! You will see elsewhere in SPRAT that the rules for the new QRP Class (5W) in NFD for the UK have been announced by the RSGB. I still need information about other European countries with a view to approaching IARU to persuade them to change their QRP level of 10W to the 5W level adopted by all QRP clubs.

GM4CXP is mainly a VHF/UHF DXer but ventures onto HF. Derrick prefers CW and offers skeds with GM to our novice members. G3XJI has recently returned to QRPing with the Howes 160/80m DSD/CW TX and a marine band DC receiver. Allen can't get any more than 5W out although it should give 10W. Anyone have any ideas? He tried the restricted space antenna described by G8PG in SPRAT 64 and found it a bit down on his G5RV. Last SPRAT I described Y26SW as being 14 years old. Henry is in fact 33 years old and been in amateur radio for 14 years! He worked 4K1A and V85FC to bring his DXCC to 92 with his HW9 and delta loop.

Welcome to new member UB4JHE, who is 17 years old and works only on 160m. Despite that, Dmitry has worked some terrific DX with his 3.3W and delta loop antenna. How about PY, VE, ZL, VK, 5H, 9J, 9X, YB and lots of USA stations? Another new member WB9GQJ was pleased to work your scribe in the ARCI Fall Contest for his first two-way QRP to Europe. Joe uses an HW8 or a wound down TS830 to a dipole on top of his apartment building courtesy of an understanding landlord! DF5JL uses a wound down (3W) IC745 for QRP work and an indoor magnetic loop with a diameter of 80cms. Tom has worked VP2E and lots of USA stations with it.

At 0130z on 20th August TF3GBN worked 4K1AFM in the Antarctic on 3507 whilst running 5W from a homebrew TX! Bjarni was using an inverted L antenna about 39m long and 7m high and wonders whether his QSO is a QRP distance record for 80m? Perhaps the ARCI records for their "1000 Miles per Watt" award would tell. GØDJA has been building a rig for 30m but other projects have overtaken it! DJ1ZB was QRV from SV5 in May and made 163 QSOs with the best band being 18MHz. In August Ha-Jo was QRV from SV9 but a nearby high voltage line hindered operations and he only made 72 QSOs.

I3MDU did 10m in the CQ SSB Contest and worked YC, CX, 6W, PYØ, 5Z, VP9, CE, Z2, V5 and D4 and a WAC in under two hours. Mike used the K1EA computer logging program, (is there any other way to go if you have a PC computer?). As Mike says the big contests are a super way of increasing your country scores. I entered the all bands QRP Class of the contests to evaluate my new Argonaut II under contest conditions. In the SSB (yes SSB!) part I had 645 QSOs which included 85 DXCC and in the CW part I had 1025 QSOs which included 93 DXCC, each in 48 hours!

That just about empties the files and the packet mail box. Please keep your news and information coming, especially on the new Argonaut II and NFD. A very Happy New Year to you all and hope to see you in the Winter Sports using GBØQRP. Let me know how your winter goes, by the 20th February please.

73, Chris

# HF FIELD DAY AND QRP

## Part III

by Chris Page G4BUE

The HF Contest Committee of the RSGB have now set the rules for the new QRP Section in HF Field Day 1992, (6th/7th June). The QRP Section will have the same rules as for the Restricted Section but with the addition that:-

1. transmitter power limit is 10 watts input or 5 watts output, and
2. the transmitter or outboard PA must not be capable of RF output power in excess of 15 watts.

This second clause is in line with the Low Power Field Day rules and is intended to stop people getting tempted to "turn the wick up" when the going gets tough. A very sensible requirement in my view.

In all other respects the rules will be the same as for entrants in the Open and Restricted Sections. In particular entrants must register with G3SJJ (J.C. Burbanks, Southlands, 16 Cotgave Road, Plumtree, Nottingham, NG12 5NX) so that stationary can be sent out and inspections organised. The complete rules will appear in the February edition of Radio Communication.

I am aware of several clubs and groups who will be entering the new QRP Section. How about getting a group together? Possibly our European members can persuade their national societies to include QRP Sections? Perhaps the G-QRP-Club could sponsor a trophy to the RSGB for the winner of the QRP Section?

**FOR SALE:** Ten-Tec model 515 Argonaut with fitted additional model 217 500Hz 9MHz IF crystal filter (\$70) automatically switched in when CW is selected; Model 210 power supply; Model 215P/PC microphone and stand; Model 208A notch/CW filter; Model 206A crystal calibrator; Datong RF speech clipper. All in first class working order - £400. Kenwood TS440 transceiver, 270Hz CW filter, VFO slow motion kit, boxed and manual, used as reserve rig only, immaculate - £775. Yaesu FR101 Receiver, 600Hz CW filter, WARC bands, boxed and manual - £150. Drake TR6 50MHz transceiver and PSU, only 500 ever built! 100 watts - offers. Aftronics SuperSCAF switched capacitor audio filter - £80. PK88 TNC - £90. Pye Westminster 2M FM - £40. C64 Commodore computer and PSU - £60. ICS packet software cartridge and RS232 interface - £25. Chris Page, G4BUE. Tel: 0903 814594 or QTHR.

### THE TEN TEC MODEL 535 ARGONAUT II

Chris Page, G4BUE, has agreed to collect experiences and any problems relating to the about transceiver. Owners are asked to drop a line to Chris, C.J. Page, G4BUE, Alamosa, The Paddocks, Upper Beeding, Steyning, West Sussex, BN44 3JW (or Packet @ GB7VRB).

### Use The International QRP Calling Frequencies

**CW : 1843, 3560, 7030, 10106, 14060, 21060, 28060 KHz**

**SSB : 3690, 7090, 14285, 28360 KHz**

**LISTEN OFTEN AND CALL "CQ QRP" OFTEN**

## THE INSECT FILTER : A PRODUCT ANNOUNCEMENT

**THE INSECT FILTER** type CW501 is a variable Frequency and variable Bandwidth very narrow bandpass filter designed for the reception of CW signals at 800Hz.

It is self contained, in its own cabinet 8" x 6" x 3" and connects with a single lead to your transceiver Phones socket, your headphones or loudspeaker then plug into the filter which operates from 12 - 14 volt DC.

Its Principal Facility is its ability to copy very weak signals which are up to 45dBs (or 4 1/2 S-Points) below the level of the human ear, or buried in noise. It does this by wiping out up to 199/200ths or 99.5% of the noise\*\* present in the receiver output. (\*\* As measures on a Yaesu FT200).

It also has a continuously variable bandwidth that is adjusted by a front panel control. This starts at 110Hz and can be narrowed to a minimum bandwidth of just 10Hz.

The normal operating (Mid-Scale) bandwidth = 60 Hz. When used at a bandwidth of 45Hz it has a very commendable gain of 30dB, rising to 58dB as the bandwidth is further reduced.

Front panel controls are included for frequency adjustment from 750Hz to 850Hz, Input and Output matching for 600 ohms or 8 ohms, as well in Input and Output attenuators totalling 100 db or -10 S-Points.

The filter really comes into its own, when the band conditions are going out, and reception is very noisy.

On demonstration whilst receiving an RST339 Morse Code signal through heavy noise (so weak that most of us would not bother to copy it) the filter easily changes this into an RST 589 signal that is too loud for wearing headphones. It does this with 20dBs of reserve attenuation included.

A signal of comfortable level in the earphones often cannot be heard without using the Insect Filter.

A DC power supply of around 13.8V is required by the Insect Filter which has a built-in indicator for correct level and tuning. It comes in a smart metal case with provision on the single pcb for including a CW computer terminal, or ready made with it on board, that gives outputs at Audio Frequency, TTL and RS232C simultaneously.

Available ready made, or as a kit of parts backed by a optional fixed price get you going service. Prices from 69.95 inclusive of Post & Ins. For more information: Simply send an SAE Marked " Insect Filter" to:-

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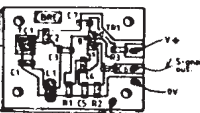
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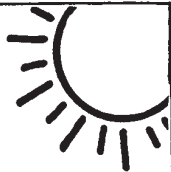
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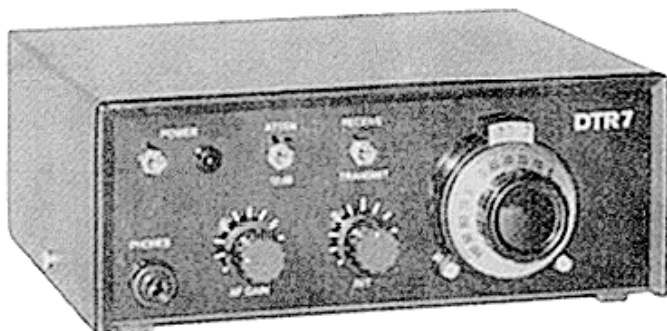
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