



# SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED TO LOW POWER COMMUNICATION

ISSUE NR. 73

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WINTER 1992/3

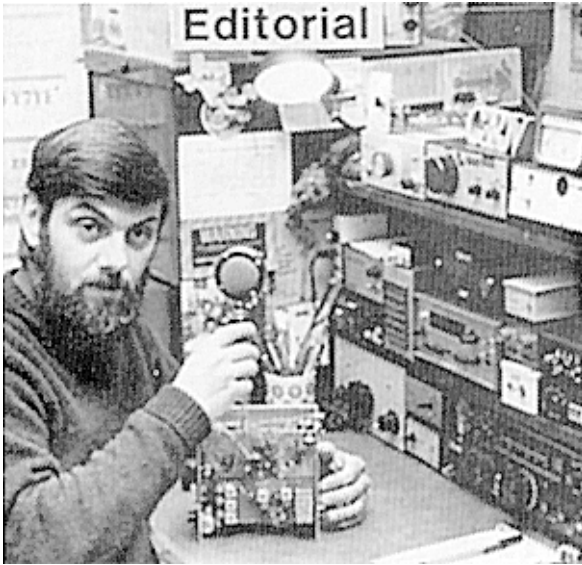


**"In the Spirit of QRP"**

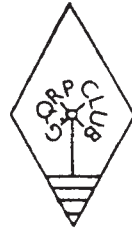
"Walk softly but Carry a Big Stick" Theodore Roosevelt. Photo: Luke Dodds W5HKA

**POLYPHASE EXCITER - ULTIMATE KISS - YEovil 93 - SOLAR TRANSCEIVER  
CERAMIC RESONATORS - SIMPLE COUNTER - TARS SPECIAL - JAW PROBE  
7MHz LOOP - MOSFET PA - UGLY ATTENUATOR - HW9 MODS - RF AMP  
KRISTA KEYER - LOGO ITEMS - G3ROO - G/OK WEEKEND RULES - INDEX  
COMMUNICATION FORUM - NOVICE NEWS - SSB NEWS - MEMBERS NEWS**

# JOURNAL OF THE G QRP CLUB



Rev. George Dobbs G3RJV



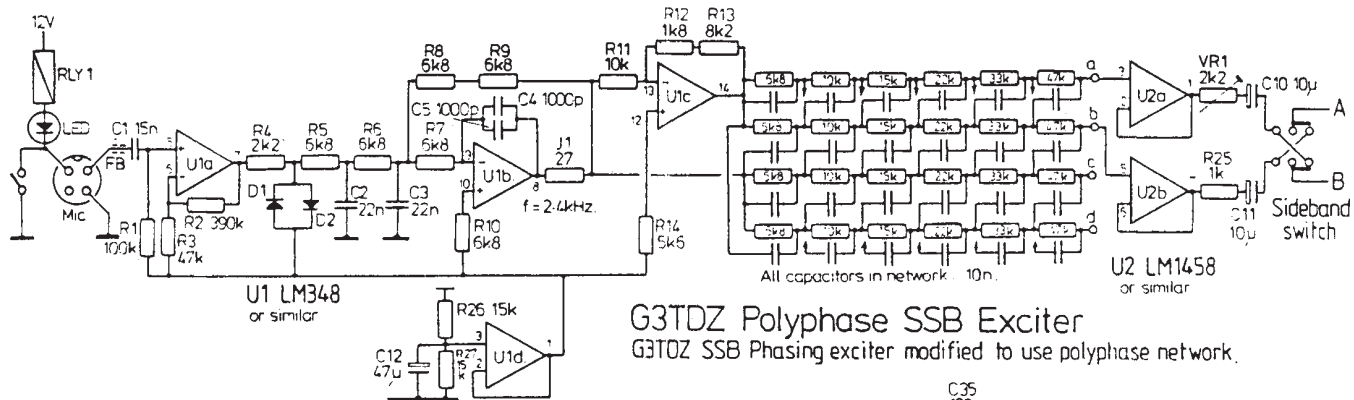
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**St. Aidan's Vicarage  
498 Manchester Road  
ROCHDALE, Lancs,  
OL11 3HE. England.**

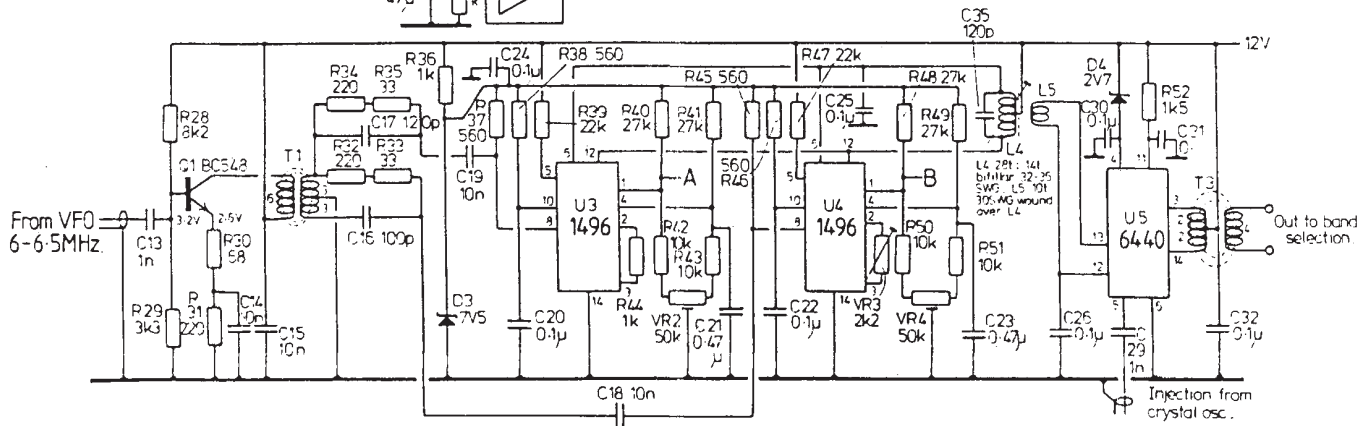
**Telephone and FAX  
0706 - 31812**

**Best Wishes for 1993  
to all Members both  
New and Old**

*George Dobbs*  
G3RJV



**G3TDZ Polyphase SSB Exciter**  
 G3TOZ SSB Phasing exciter modified to use polyphase network.



During the late sixties and seventies, theoretical descriptions of the polyphase network as used in the phasing method of sideband generation appeared in the amateur press. In September 1976, G3TDZ described a practical realisation of this technique in Rad Comm. Since the White Rose SSB exciter featured in Sprat 66, Winter 1991, people have asked if this technique may easily be tried. The White Rose exciter board can be very

easily adapted by adding a piggy-back board with the polyphase network in place of the phasing components R15 to R24 and C6 to C9. Resistors R12 and R13 are replaced by 8k2 and 1k8 to produce a balanced p-p drive. The polyphase network is driven from pins 8 and 14 of U1, and terminated by the buffers U2a and U2b, pins 3 and 5. Any two adjacent outputs may be used; "a" and "b" are suggested. No other modifications are necessary.

# ULTIMATE K.I.S.S.

Chris Garland G3RJT

48 Underbank End Rd. Holmfirth, Huddersfield. DD7 1ES

K.I.S.S. : "Keep It Simple Stupid" has become a common phrase in amateur radio construction. Nicky's TRF in SPRAT 70, by G3VMU, is a development of a TRF circuit by Des Vance, G13XZM in Technical Topics, RadCom October 1987. Colin added sophistication, my approach to the same circuit is ultimate simplicity.

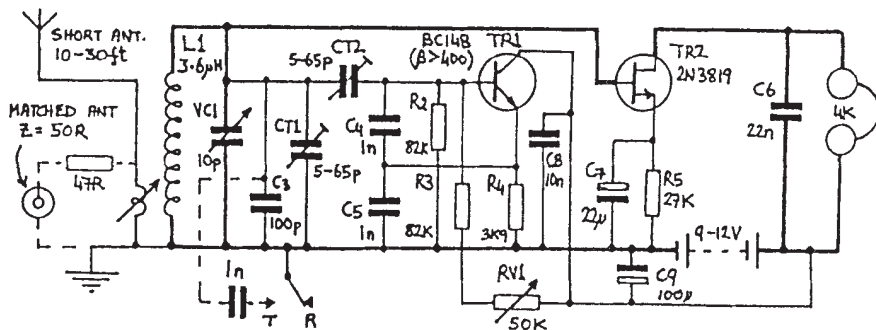
## THE ACTIVE CRYSTAL SET : A TWO TRANSISTOR COMMUNICATIONS RECEIVER

TR1 and associated components form a "Q Multiplier" which boosts the Tuned Circuit performance to near the lossless ideal. This is an oscillator circuit provided with means of adjustment through the threshold of oscillation (i.e. a 'reaction' control). Oscillation occurs when the tuned circuit losses are cancelled out, which is equivalent in theory to having an infinite Q. The Q Multiplier therefore functions simultaneously as an highly selective RF Amplifier and a BFO. "Reaction" is adjusted by RV1 which controls the gain of TR1 as a function of collector current, and also by CT1 which is preset so that the threshold of oscillation occurs at about mid-travel of RV1. CT2 also affects tuning and correction is made by adjusting band setting trimmer CT1. The 10 turn pot used in the Nicky TRF is not required unless a wide frequency coverage is desired. I could profitably reduce the value of the reaction pot from 50K to 5 or 10K. Selection of TR1 for a gain greater than 400 [at Ic 1mA] is recommended.

TR2 is a JFET version of the "anode bend" detector, which has infinite input resistance, enabling it to be connected directly across the tuned circuit thereby obtaining the maximum signal voltage at its input, without a damping effect. It has sufficient gain to drive sensitive high impedance headphones. C6 gives the audio response a high frequency roll-off characteristic. A value of 22,000pF is suitable for CW but can be switched to 2200pF for SSB and AM reception

It is essential that the strength of signals is kept below the level at which pulling or capture of the Q Multiplier oscillation occurs, or at which very strong signals well off frequency are heard. This is best achieved by using a moveable single-turn link winding to couple the aerial to the earthy end of the tuned circuit. The link position is adjusted to induce just sufficient signal for satisfactory reception. In practice it has been found that adjustment is made in respect of Band conditions rather than the strength of individual stations.

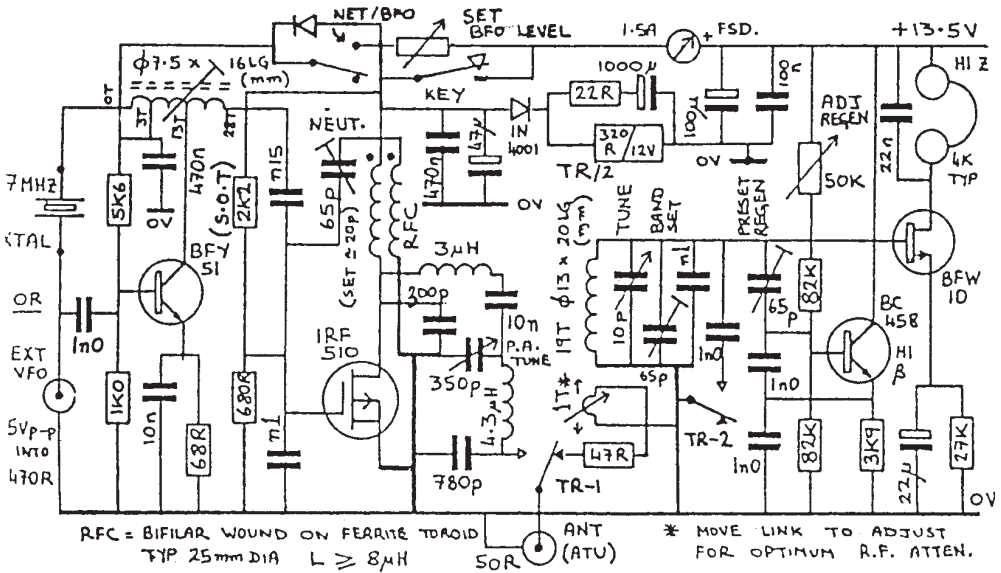
The tuned circuit values shown are for band spread coverage of 7MHz but may be scaled for other bands. Note the whole of the capacitor network that connects to L1 forms part of the tuned circuit. Other component values are valid for all bands. When used with a transmitter, 47Ω resistor should be added in series with the link winding to normalise input impedance, and muting during transmit should be done by detuning alone - with 1000pF switched across the tuned circuit - to avoid warm up drift if power is switched. the additions are shown hatched.



## THE ULTIMATE KISS TRANSCEIVER [for 40 Metres]

Ultimate Kiss sets out to be the simplest effective amateur radio station [cw only] that it is possible to make. Although a single transistor transmitter is possible, I have chosen to use two. This allows the signal level generated by the crystal oscillator to be made adjustable so that it can be used as a stable BFO on receive.

With the reaction control adjusted just short of oscillation, the receiver response [ $Q = 10,000 +$ ] is peaked to the desired signal allowing extraordinary selectivity and stability to be achieved for so simple a design. It is doubtful if it would be possible to achieve sufficient reduction in the signal level generated by a single transistor transmitter to allow it to be used in this way. So four transistors is considered the minimum for a sensible, usable rig! I have worked a representative sample of European countries with the rig. The circuit, which appears on the back of my QSL Card, gives all the values for 7MHz and includes the transmit/receive switching circuit.



## THE 7th YEovil QRP CONVENTION

Sunday 9th May 1993

The Preston Centre, Monks Dale, Yeovil

This popular event is being expanded this year to occupy more floor space. It will include lectures, a QRP station, Trade stands of kits and components, a "chronological display of working vintage radio with technical commentary" and refreshments will be available throughout the day.

The lectures booked are, "Propagation for 10 Milliwatt DX" by G3MYM, "Transmitting Aerial Basics" by G3MCK, "The Yeovil 80 and 20 metre Transceiver" by G3PCJ. The event will also include the Yeovil "Construction Challenge" a novel competition for constructors. [Rules page 13 of this issue of SPRAT]

# A SOLAR POWERED 40m TRANSCEIVER

H.C.S. (SPENNY) Spencer G6NA

Tilshead, Tom's Field, Langton Maltravers, SWANAGE. BH19 3HN

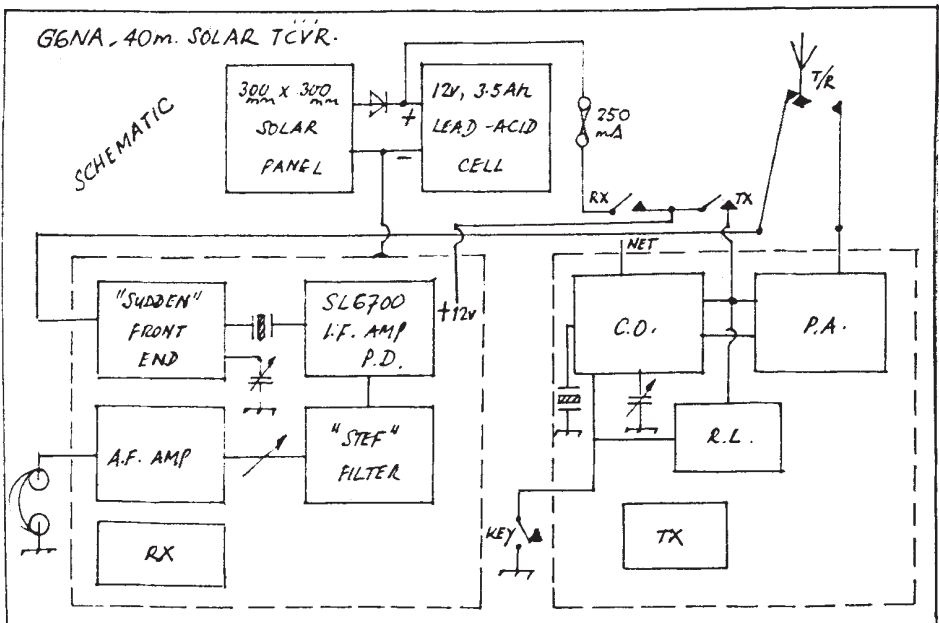
I have had many enquiries about my solar powered 40m rig - here it is.

Early 'monolithic' photo cells were expensive but more recently an 'amorphic' form has appeared made by evaporating the active elements on to glass. See the GW4IED advert in SPRAT for supplies.

I use a panel 300mm square which keeps me well supplied for operating even in winter. The receiver takes 10mA [0.1AH for a 10 hour day]. The transmitter takes 100mA [about 0.2AH per day for my type of operating]. Thus I only need one hour of bright sunshine for daily use with battery storage for dull days. A 3.5 AH sealed lead-acid battery should see me though until Spring when I receive more current than is being used daily.

The Transmitter is a W1FB 'PEBBLE CRUSHER' [SPRAT 66] with a netting button added. The superhet receiver consists of a SUDDEN front end, output being taken, from pins 4 and 5, to an SL6700 via a transformer of 15 bifilar turn primary, 10 turns secondary, wound on a ferrite bead, and a 1.843 MHz crystal. These are cheap computer crystals, three being needed. One connected between pins 3 and 4 of the SL6700 and another for the BFO. The audio output is fed to a 'Stef Filter' [SPRAT 63] made with a 550 Hz cut-off. SL6700 details in RadCom June 1991 pp 44/5. A two stage AF Amplifier drives the Headphones. The output transformer was salvaged from a radio set - it seems to be Prim L=8H, Ratio 7:1. Any small transformer of similar characteristics would be OK. The series resistor must be decoupled to get the right amount of DC feedback.

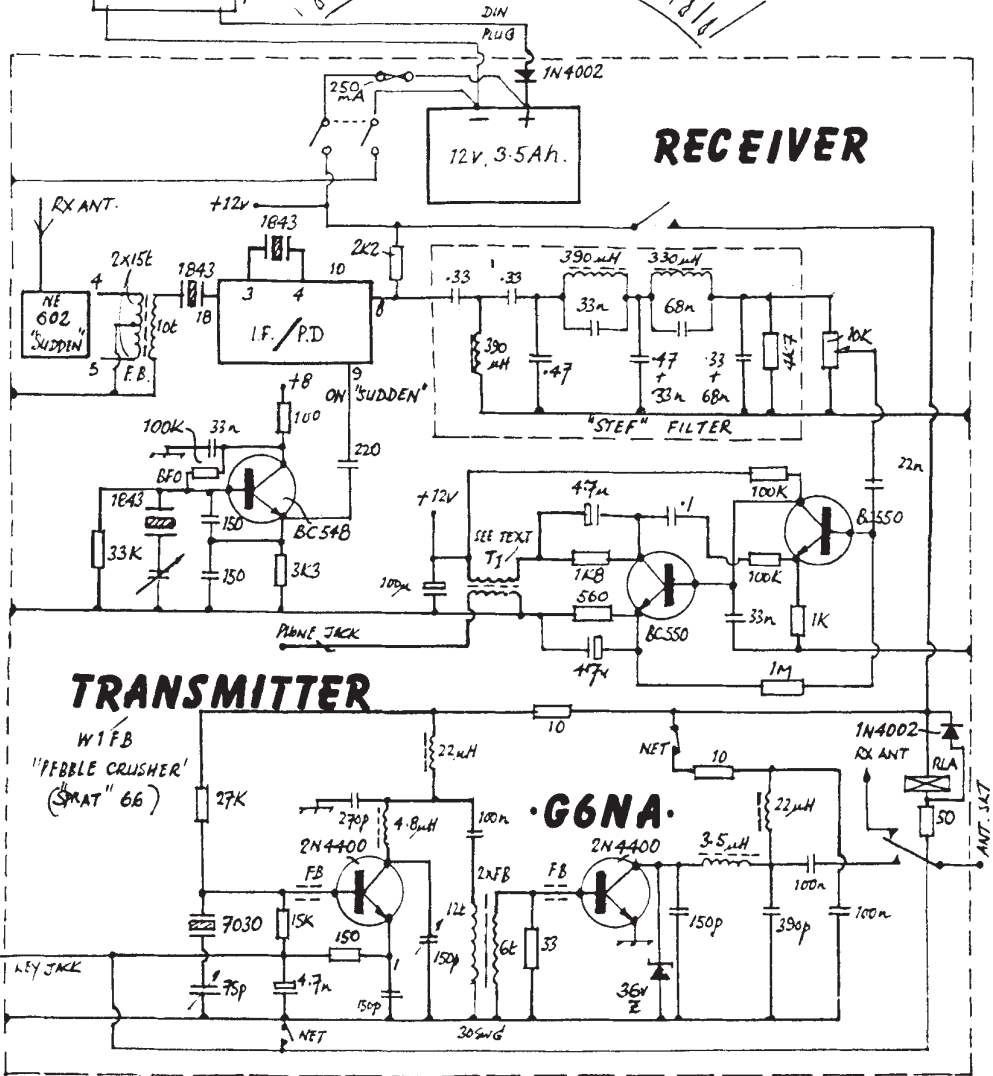
The whole station, apart from the solar panel and the key [also home-brew] is contained in a box 170mm x 90mm x 250mm deep. Tuning is via a 'Velvet Vernier' drive from a TU9. QSOs have been made with 11 countries, with half a watt, to date, most of them with fellow members.



300 x 300  
SOLAR  
PANEL

# SOLAR-POWERED 40M TRANSCEIVER

## RECEIVER



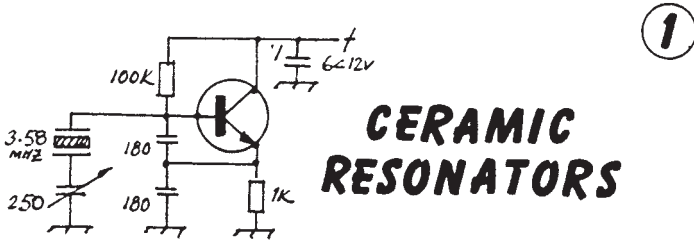
# CERAMIC RESONATORS IN RECEIVERS

Ian Macpherson GM3RXU

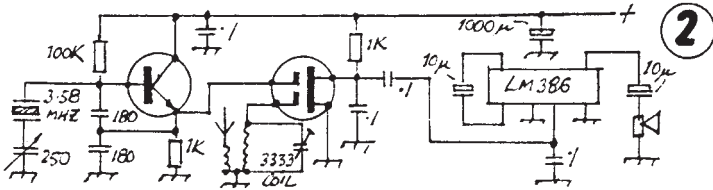
12 Hawick Avenue, Paisley, PA2 9LD

Ceramic resonators have become available as low cost very compact and robust alternatives to crystals. The Q of these components is lower than that of the equivalent crystals and consequently the frequency of oscillation can be pulled much further than for a crystal.

A typical oscillator circuit might be

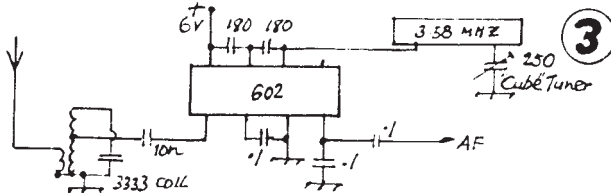


The turning capacitor can be a small medium wave radio tuning capacitor and will cover the range 3.59MHz to 3.515 MHz. This circuit will fit well into a minimum direct conversion receiver for 80 m.



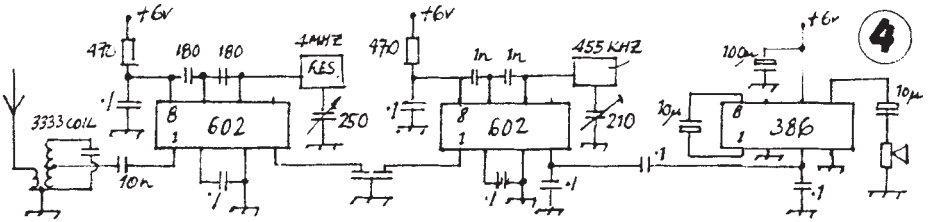
This receiver works well but can be improved by including a simple passive AF filter in the AF feed to the LM386.

The mixer can equally well be an NE602.



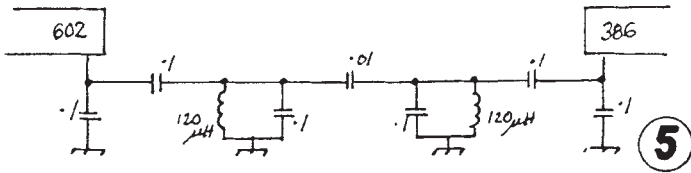
There are a variety of other frequencies available as ceramic resonators and a look at these will throw up several combinations with ceramic filters which are likely to be of use at amateur radio frequencies. As an example, resonators at 4.19MHz, 4.0MHz and 455KHz can be combined with a 455KHz ceramic filter to produce a very simple super gainer with virtually no tune-up requirements.





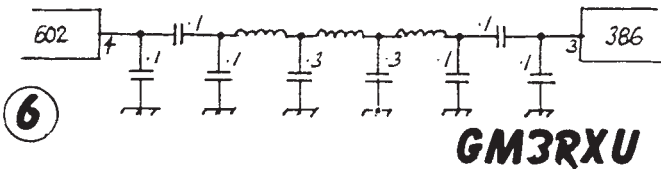
This receiver tunes 3.57MHz and only requires the RF coil to be peaked, everything else is pretuned. The filter can be a type CFU455IT at about £2.00, or a type CFW455HT about £2.50. The 455KHz resonator as the BFO can be tuned with a 250pf trimmer but two small polystyrene capacitors in parallel (137pf and 80pf) are just right to place the BFO on the correct side of the IF passband. As it stands the circuit gives single side band CW reception but with a wide audio band width. CW reception can be improved considerably by the inclusion of a passive AF filter.

The circuit:



will give a nice peaked response with the 120mH pot cores from Cirkit.

Replacing the 4.0MHz resonator with a 4.19 MHz resonator will tune a portion of the SSB part of 80m. Here a different AF filter will be required and the one shown below will give a narrow passband more suited to QRM elimination than high quality.



This is based on the same 120mH pot cores from Cirkit. Gain in all these circuits is not high but can be improved if required by the addition of a small low noise single transistor amplifier between the AF filter and the LM386.

Ceramic resonators are available from Radio Spares and Cirkit at low cost.

**A SIMPLE FREQUENCY COUNTER**  
**For Direct Conversion Receivers**  
**Graham Adcock G4EUK**  
**120 West Way, Lancing, West Sussex, BN15 8NB**

This unit provides a simple counter than can be used with direct conversion rigs and some superhets and indicates the offset from the band edge with a resolution of 100Hz. Four decades are used so the "MHz" digit is lost but is assumed that the band in use is known!

The idea is not new, appearing in the excellent seventh edition of Amateur Radio Techniques on page 363. I've simply added a crystal reference freq. and a signal interface.

The 4060B generates a 3.2768MHz signal from a crystal and divides by 16384 giving a 200 Hz square wave. This is further divided by 4 in a 4013 dual "D" latch to give a 50Hz square wave.

Q2 low enables the counters but blanks the display. At the end of the 10ms period. Q2 goes high, disabling the count and enabling the display for 10ms. The cycle repeats continuously and is preceded by a positive spike applied to the reset by the/Q2 signal via the 220pF and 10k load/clamp diode.

Some variants of the 4060B were found to be a little temperamental in the oscillator department but the Harris CD4060BE worked faultlessly.

Both common anode and cathode drivers are suggested but if low current displays can be found (up to 5mA) they can be driven directly via an appropriate resistor, saving a lot of hassle.  $R_s = (V_{dd} - V_d / I_d)$  where  $V_d$  approx 2v. Transistor array packs (such as the CA3081E for common anode or CA3082E for common cathode) and resistor packs are useful for reducing the space required.

The Decimal point should be enabled between the least significant and next least significant digits.  $R_s = 330R$  at 5v or 600R at 8v.

I've used it up to 5Mhz but it should operate up to 8Mhz with the supply increased to 8v. Increasing the supply voltage requires a slightly larger i/p signal and requires the series resistors in the LED drivers to be increased to 470R for common cathode or 560R for common anode.

It's a gem on direct conversion rigs as the frequency of the oscillator (and hence the operating freq) is displayed, including IRT on rx.

I've also used it on my Cheriton where on 20m it shows offset from 14.0 Mhz, ie "060.0" puts me on the CW calling freq.

On 80m I have to add 500kHz but all I really want to know is the offset from the lower band edge which it tells me directly.

Further decades can be added to include the KHz digit(s) or variations made to the count period to vary the resolution.

**AGCW-DL QRP WINTER CONTEST**

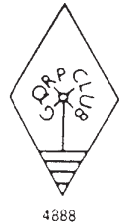
1st Complete Weekend after New Year's Day Details : See QRP Column in RadCom or SAE to G3RJV

**A SPECIAL NOTICE TO MEMBERS**

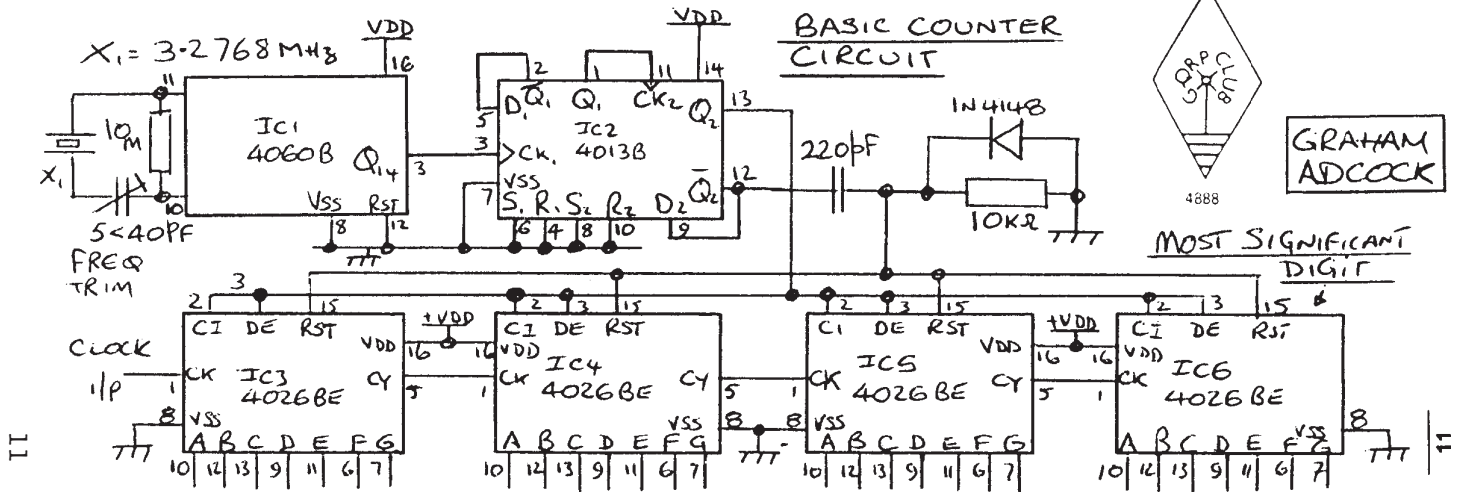
**PLEASE NOTE THAT ALL CHEQUES  
FOR SUBSCRIPTIONS AND OTHER CLUB SERVICES  
MUST BE MADE OUT TO "G QRP CLUB"  
NOT TO INDIVIDUAL OFFICERS**

**CORRECTION:** On page 28 of the last issue, the Hertsverter. Pin numbers for the NE602. Pin 8 is opposite 1 and 5 is opposite 4.

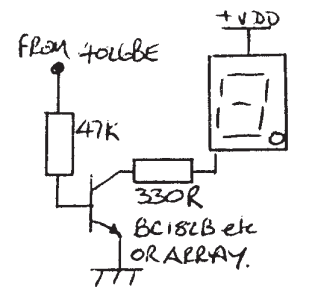
# BASIC COUNTER CIRCUIT



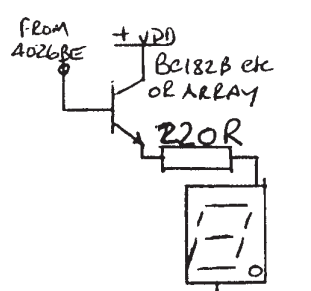
GRAHAM ADCOCK



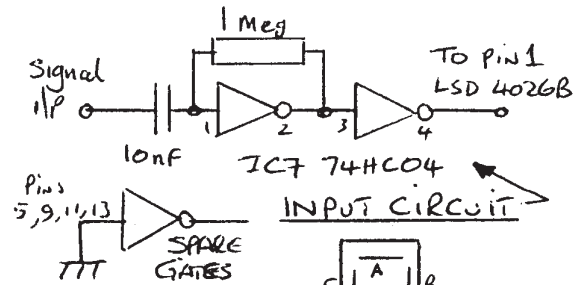
MOST SIGNIFICANT DIGIT



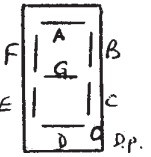
COMMON ANODE DRIVE  
(7 CIRCUITS REQUIRED)



COMMON CATHODE  
7 CIRCUITS REQUIRED.



SEGMENT ALLOCATION



## THE TARS SPECIAL

Derrick G3LHJ (G-QRP-C #898) & Andy G4VPM (G-QRP-C #4231)

A few years ago we went up to the Yeovil QRP Convention, one of the best QRP events around the country. We'd both built and used QRP gear in the past and Derrick was already a member of the G QRP Club, Andy joined at the Convention.

One of the highlights of the day was a terrific talk and slide show by Chris G4BUE during which all sorts of interesting QRP rigs were shown. Seeing all this fired us up and led to Derrick deciding to try and stir up some interest in QRP at the club. He designed the "TARS Special" transmitter to begin with. This is essentially a real 'mongrel' having elements of various prior designs in it. There's a fair bit of GM3OXX's famous OXO; the keying and changeover circuit is from G3RJV's "Teme" dual band transceiver; there's a bit of the STX, another QRP classic there too. The idea was to build something simple with a view to encouraging first time constructors. As well as being simple no attempt was made to condense the PCB down to a small size. Those new to construction would fare much better with plenty of room to work. Time enough to scale things down in the later parts of the project.

So the transmitter was designed, built and tried out. After one or two hiccups it worked great - a whole 1 watt out on 80 metres! So the club members were introduced to the idea and a small, but enthusiastic, band of them got construction fever. All the work was initially done on Friday nights at club HQ. This way there was plenty of mutual assistance to be had. It was a great feeling for the builders to actually fire up their transmitters and, (not always immediately!), to get them working.

The transmitter is a simple crystal controlled oscillator with a PNP PA. Following these is a simple harmonic filter. The changeover circuit revolves around two 2N2905s, one for keying and one to drive the changeover relay. A couple of LEDs (a la "Teme") indicate the rig's state (TX or RX)

One of the facilities in the transmitter circuit is a switch to switch between either crystal or VFO input. So obviously we needed a VFO! Well, Andy gleaned a suitable victim from the pages of "Solid State Design for the Radio Amateur" (the QRPer's bible!) and made up a PCB layout. This time the PCB was a little more compact although there was still room for those who found construction didn't come too easy. The VFO proved to be pretty stable and a few of the budding constructors built their own and got them going. The circuit is a classic Colpitts type with FET oscillator, emitter follower and buffer stages. Output is available for both the transmitter and an optional receiver.

So finally we needed a receiver. Again Andy delved into the bible and came up with the receiver that matched the VFO. The basic circuit consisted of a product detector using a dual gate mosfet, audio stages and a sidetone circuit. He knocked up a prototype and passed it onto Derrick for testing (and debugging!). There were only one or two minor problems initially but what soon became apparent was that the planned sidetone circuit didn't want to know. The receiver worked great and, at Derrick's QTH, didn't suffer from overloading too much. More on that later!

So it was back to one of the old favourites, the "Teme", and the sidetone circuit from that was tried. This proved an instant success. The other snag was that the receiver output was intended for high impedance phones. Not everybody's got these (Derrick has!) so a straightforward little audio amp was added.

So Derrick completed the full transceiver, all in its box, very nice, and he had lots of QSOs on it. He brought it up the club to show the others, although by this time the enthusiasm seemed to be waning. In fact, apart from Andy's prototype PCB and Derrick's finished item, to the best of our knowledge nobody else has built the receiver. Anyhow, back to HQ; Derrick plugged the rig into the Club's trap dipole, switched on... and cringed! It was OK at home on his 90 foot long wire but on the trap dipole the broadcast breakthrough was horrendous! Attenuation was sorely needed, especially for evening times. So a little switched attenuator was

added to the circuit.

So there it is. There is only one complete transceiver (that we know of) but there are a few TX/VFO combinations about. It's easy to build, there are no hard-to-get components, and it won't cost the earth. We've included the circuit diagrams in the mag, but to save on space we've not put the PCB layouts in. You can get those from Derrick - if you want them by post send him an SAE QTHR. He's also got details of a nice little matching SWR meter and box dimensions for the transceiver. Piece of junk? No way, we're sure you'd be very pleasantly surprised what you can work on it.

If you want more info, contact either of us. If you want to see the finished article, see Derrick. Other than that - get building!

73 and 72 de Derrick and Andy

#### **Transmitter Notes:**

Switch S1 is an SPDT type. All resistors are 1/4 watt types, all fixed capacitors disk ceramic EXCEPT C10 (electrolytic 16v working) and C5/C6 (polystyrene or silver mica). L1 is 15 turns 32swg enamelled copper wire on a ferrite bead. L2 is 21 turns 22swg e.c.w. on a T50-2 toroid. The relay is a double pole changeover type obtainable from Maplins. Garex do a suitable relay (brand name 'Keyswitch') for about 60p! The ideal crystal would be 3.560 Mhz (QRP calling frequency) but any 80 metre band crystal would be OK. You can omit the switch if you intend to use the VFO only and link it straight in.

**N.B.!!! The PCB layout is as for the MAPLIN relay. It will have to be altered if the Garex or some other relay is used.**

#### **VFO Notes:**

Resistors are 1/4 watt types. Fixed capacitors are disk ceramic EXCEPT C1/C2/C3/C4 (polystyrene or silver mica). VC1 is a PCB mount air-spaced variable, VC2 a panel mount air-spaced variable and VC3 can be an ordinary film trimmer. L1 is 30 turns 24swg e.c.w. on a T68-2 toroid.

#### **Receiver Notes:**

Switch S1 is an SPST type. Resistors are 1/4 watt types. Fixed unpolarised capacitors are disk ceramic. Polarised capacitors are electrolytic or tantalum, 16 volt working. L1 is 6 turns, L2 is 44 turns 28swg e.c.w. on a T50-2 toroid.

#### **NOTE FROM G3RJV**

The PCB Layouts in this article are shown half size with the Circuit Diagrams  
Full Size PCB Layouts are available for an SAE marked "TARS" to G3RJV

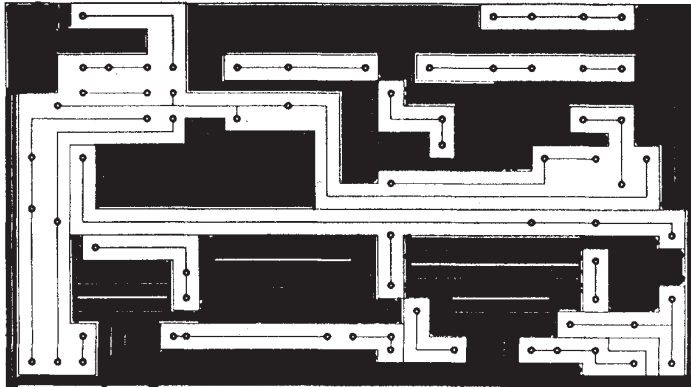
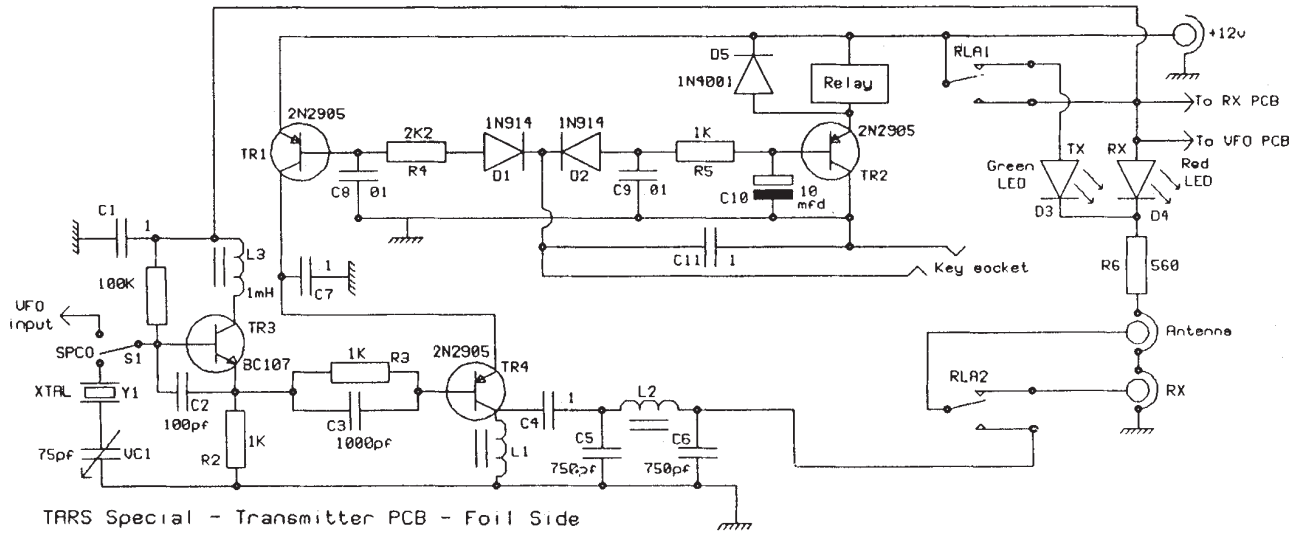
### **The Yeovil Construction Challenge 1993**

Built and bring a device, using passive only components, which will receive and measure the frequency of continuous wave signals radiated between 3.500 and 3.800 MHz. The transmitter will have an input power of 1 watt and use a vertical aerial two feet long.

There will be two separate transmissions, each of 5 minutes duration, on different frequencies in the band. You will be asked to record your measurement of these frequencies on an entry form provided and submit it to the adjudicators. Entrants will be allowed to position their measuring device anywhere within a six foot radius arc, 270 degrees wide centred on the transmitting aerial. The difference in frequency (higher or lower) from the actual frequency will be expressed as a percentage. The winner will be the entry with the lowest total percentage error for the two transmissions. A description and circuit of the device must be provided for the adjudicators. The transmitter frequency will be measured and monitored by an accurate frequency counter visible only to the adjudicators. No active measuring equipment will be allowed in the test area during the test period.

Further details of the challenge and the convention may be had from Peter Burridge, G3CQR, QTHR or Tel: 0935 813054.

# TARS Special - Transmitter Circuit Diagram

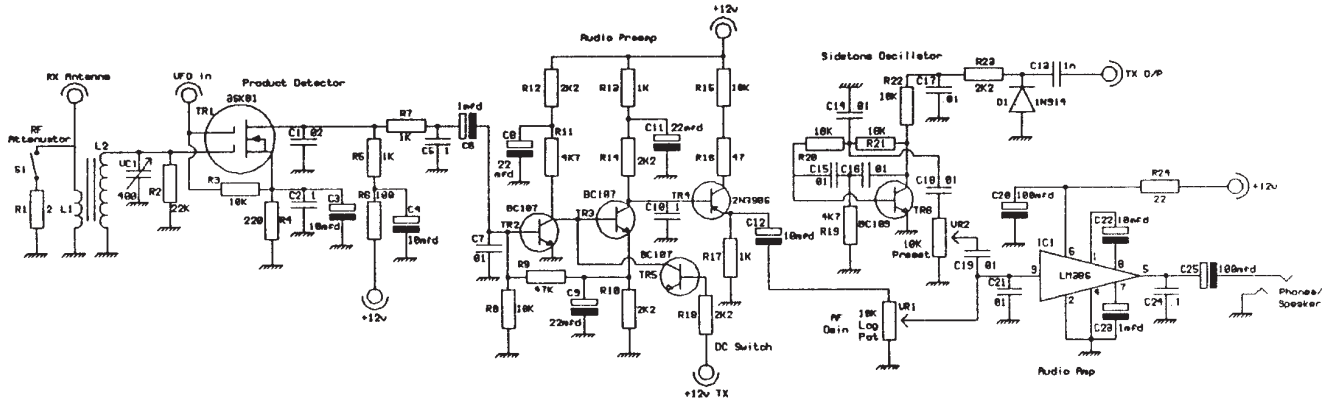


## TARS SPECIAL TRANSMITTER

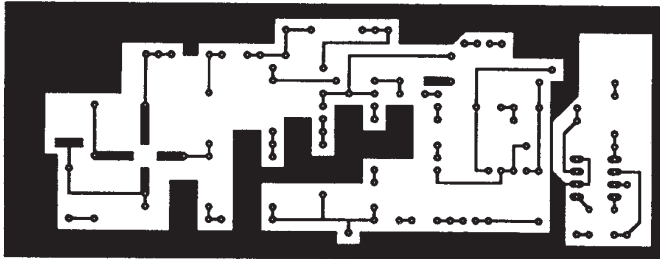
Circuit

PCB Layout  
[Half Size]

## TARS Special - Receiver Circuit Layout



TARS Special - Receiver PCB - Foil Side

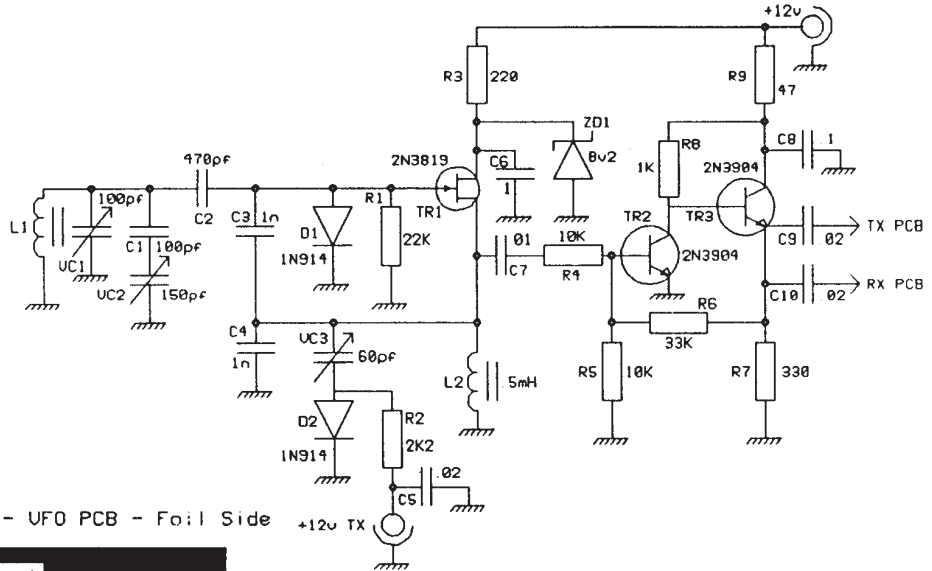


## TARS SPECIAL RECEIVER

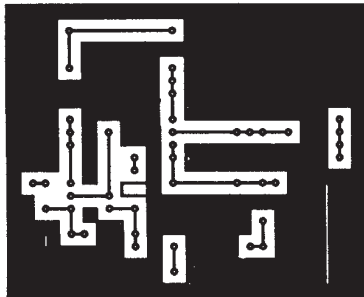
Circuit

PCB Layout  
[Half Size]

# TARS Special - VFO Circuit Diagram



TARS Special - VFO PCB - Foil Side



**TARS SPECIAL  
V.F.O.**

Circuit

PCB Layout  
[Half Size]



## JAW-TYPE CURRENT PROBE

Ha-Jo Brandt DL1ZB

Lohensteinstr 7/B, W 8000 MUENCHEN 60. Germany

With interest I have read the contributions of GM4IJG and GM4JMU (SPRAT Nr. 51,52 and 71) on rf current probes. I am not so much interested in checking feeder currents, but to detect and measure rf currents around the shack and in the house installation to study EMC problems.

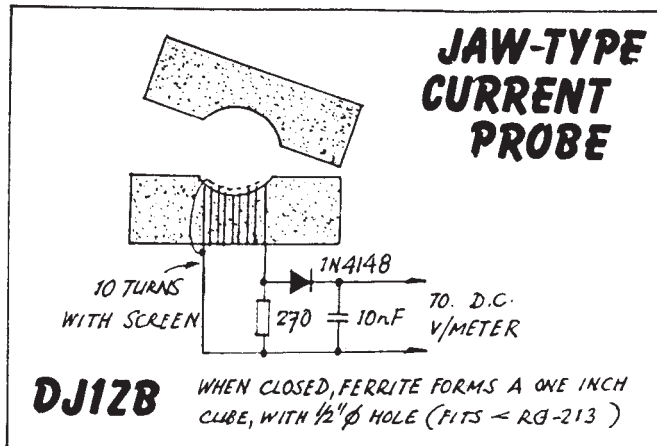
I wanted to avoid cracking a ferrite toroid, and therefore I have made use of split shield beads or sleeves originally designed for EMC purposes. I am employing a pair of Amidon 2X-43-151 cores (original FairRite Nr. 264164151). In spite of the fact that the 43 material is mostly used for EMC purposes it is also well suited for transformers, baluns, and VSWR meters in the hf range - and for current transformers. 10 turns on such a core will give an inductivity of about 150  $\mu\text{H}$ . Therefore this coil will have a reactance of about 1400 ohms at 1.5 MHz. Measurements have shown that such a current transformer becomes frequency independent if the coil reactance is at least 5 times the parallel resistor (up to a frequency range where the coil will show self resonance). Therefore this coil, with a parallel load resistor of 270 ohms, will work fine as a current probe from 1.5 to about 30 MHz. To avoid capacitive coupling, a thin copper foil may be placed over the coil and insulated with tape.

It is even possible by simple means to determine the rf current in a wire which is fed through the closed core. If the current were 100mA with 10 turns, then the current in the secondary would be 10mA and voltage drop across the 270 ohms resistor 2.7 volts. This voltage can be rectified and measured by usual means (with the typical home brewer's problem of an inaccuracy between rms and peak values).

One problem that I will leave to the reader is the mechanism to open and to close the jaw. For my first experiments it was sufficient to employ a tape to glue both halves of the core together. A final solution should contain a hinge and a spring to pull both core halves together during measurements.

PS:

As I know that members in the UK may have trouble purchasing less popular Amidon parts, a similar core is manufactured by Steward (USA) under the part number B 2024-000, material 28, and should be available in the UK from Chomerics (UK) LTD, Parkway, Globe Park, Marlow, Bucks, SL7 1YB, Phone (0628) 486030, (according to a catalogue).

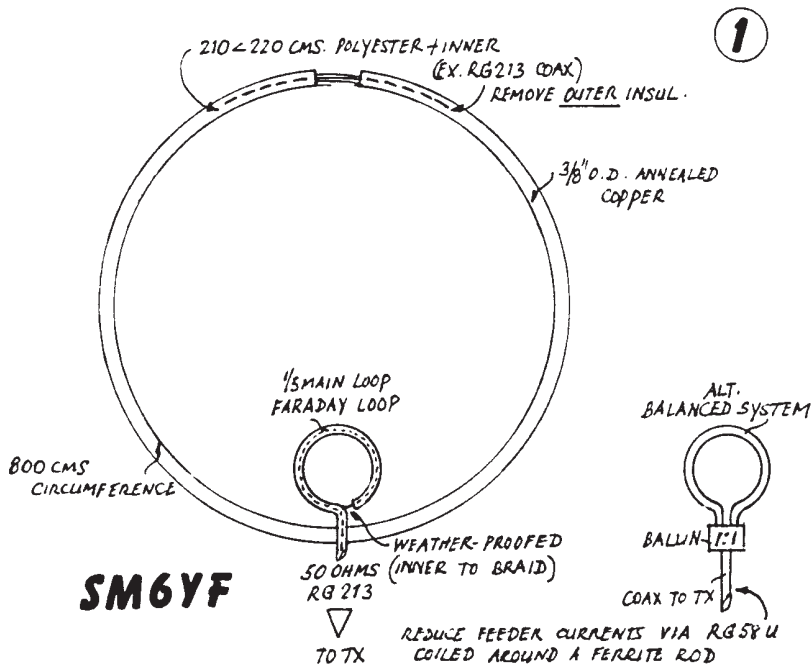


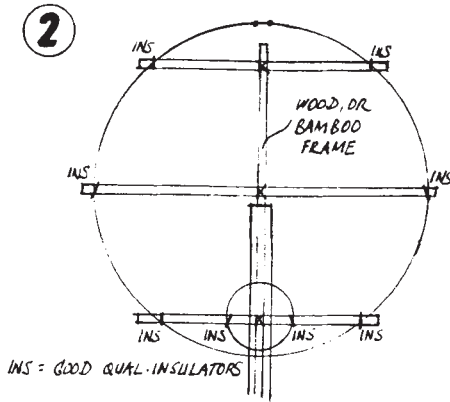
# AN IMPROVED 7MHz LOOP ANTENNA

Ben Johansson SM6YF

Aelvhemsv 162, S-44444 STENUNGSUND, Sweden

The basic loop consists of 8 metres of 3/8 inch diameter annealed copper pipe. The use of annealed copper improves the electrical characteristics, and the diameter provides good electrical characteristics while allowing easy bending. The fixed plates of the split-stator tuning capacitor are the two ends of the loop near the opening, and the moving plate is slid into these two ends. The moving plate of the capacitor consists of 220 cm of RG213 co-axial cable which has had the outer insulation and braiding removed (note; if this provides too much capacitance cut off 10 cm). The coupling loop is one fifth the diameter of the antenna, and is mounted exactly opposite the opening in the main loop. It can be made from the same material. Its ends are connected to the balanced side of a 1:1 balun. The unbalanced side of the balun is connected to an rf choke consisting of 5 turns of RG58 co-ax. One can either continue this co-ax run back to the transmitter, or use a suitable connector and a run of RG213 cable. The support for the loop must be non-metallic; varnished wood or bamboo are suitable. As shown in the diagram, the support is fitted with three cross-pieces, which service as a mounting for the loop and the coupling coil. Six stand-off insulators will be required to support the loop, and two to support the coupling coil. These insulators must be of good quality dielectric (no nylon). Tuning the loop is carried out by feeding a QRP 7030 output into it, and coupling an rf indicator to it. The moving plate of the split-stator tuning capacitor is then moved 1 cm at a time until an rf output is obtained. Very small adjustments are then made until minimum swr is obtained. When properly tuned the 1.5:1 vswr range on my model is 15 kHz. Once the tuning is finalised, carefully seal the gap in the loop with the aid of self-sealing tape (not the PVC variety). The more you can mount this loop clear of obstructions the better, but mine is mounted very close to ground and still gives excellent results on 7 MHz. To raise it would put it outside my upstairs neighbours' window, and for some reason they do not seem to understand what a thing of beauty it is!



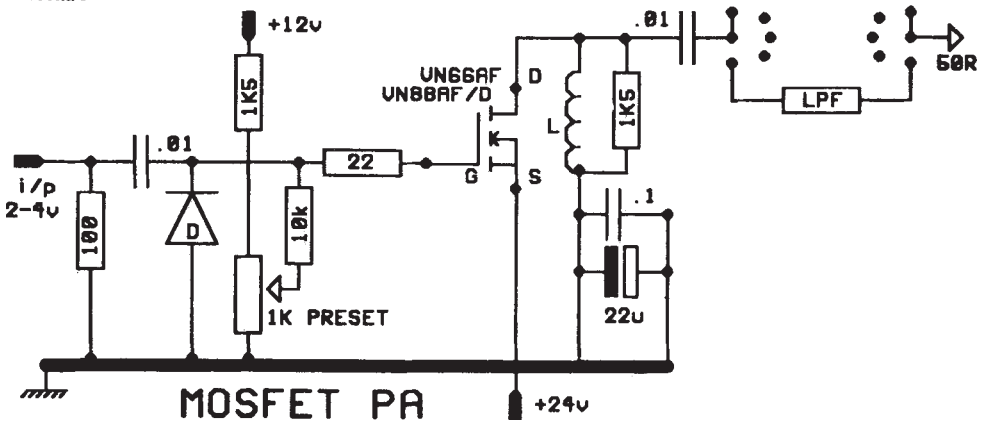


(Note; an alternative coupling loop is a Faraday shielded loop made from RG213 co-axial cable, no balun or choke being used, but it will have higher circulating current on the cable screen.

### A MOSFET POWER AMPLIFIER

Peter Brodribb G3ONL

This PA has given good service for a number of years. It is capable of at least 5w out on all HF bands. D is a precaution against gate break-down. It should be a Hot Carrier diode or a gold bonded germanium diode. L is 10 turns on a Siemens ferrite core K45X830 but try whatever ferrite toroid core you have. The output network can be a 5 or 7 element low pass filter. The MOSFETs are VN66AF or VN88AF. The VN88AFD is easier to mount on a heat than the VN88AF. Both MOSFETs and the core for L are available from Electrovaluc. VR is adjusted to give about 4v gate voltage resulting in a quiescent drain current of about 400mA.



## AN UGLY ATTENUATOR

**A Simple Relay Switched Addition for a Receiver**    **Roy Smith G0IWU**  
**4 Dawes East Road, Burnham, Bucks, SL1 8BT**

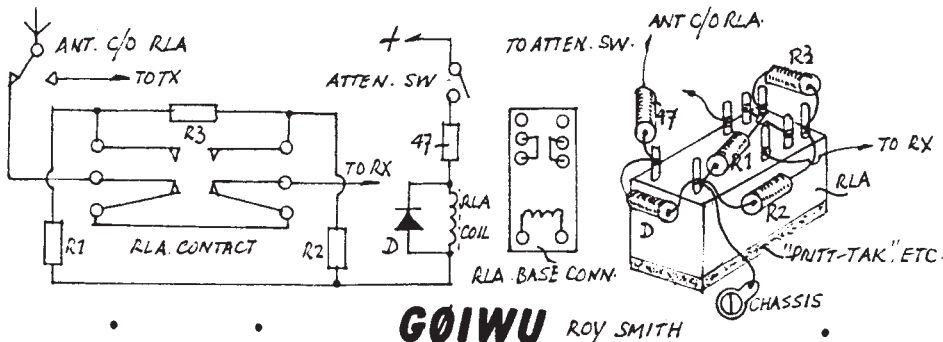
This simple receiver addition was stimulated by the White Rose Receiver. I chose relay switching because it is always a problem, however small, to join up rear panel aerial socket to a front panel switch, due to stray rf etc.

DC Receivers are renowned for the ease with which they overload by a powerful station. For my money it is even more annoying for an S9 station to force a much weaker station down in signal strength due to the way that VOGAD af stages work. Inserting an attenuator reduces this effect.

The following circuit uses an FT2-5 (Maplin) 2 pole changeover relay to switch the attenuator.

Resistor Values Chart  
 Resistors Nearest 5% values to  
 p. 99 "WIFBs Design Notebook"

POSSIBLE RESISTOR VALUES			
R1	R2	R3	dB
150R	150R	39R	6
82R	82R	91R	12
62R	62R	200R	18



### LOW POWER COMMUNICATIONS By Rich Arland

Will members who have ordered this book please note that there is still a delay. Our supply from the USA has been mislaid by the US Postal Service! We are currently claiming the lost copies and a new order has been made. Orders will be serviced, in rotation, when stocks arrive. Sorry for the problems

**FOR SALE: EX-CLUB DATABASE COMPUTER, ARCHIMEDES A310 + 50MHz Hard Drive + 4MHz RAM, Acorn Colour Monitor. Offers to Peter, G3PDL 0472 398080**

### A MESSAGE FROM THE CLUB MEMBERSHIP OFFICER

**John Leak, G0BXO, Flat 7, 56 Heath Crescent, Halifax, HX1 2PW**

I wish to take this opportunity of thanking the many members who have written to wish me well in my job as Membership Secretary, particularly those who have tolerated my mistakes with patience and cheerfulness!

Thanks particularly to my predecessor David, G4HYY, who was helpful to, and patient with, me in the changeover period.

My Best Wishes for 1993

John, G0BXO

# SUBSCRIPTIONS ARE NOW DUE

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

We do not send receipts unless we receive a stamped addressed envelope with your payment

Your receipt is the updating of your status code on your SPRAT address label

Please remember that SPRAT labels are printed 4-5 weeks ahead of publication,  
so there may be a time lag before your code is updated.

We do make mistakes sometimes!! If there is a problem, please write - an SASE helps.

---

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

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FOR DIRECT PAYMENT TO G0BXO PLEASE USE THE FORM PROVIDED  
(UK MEMBER CAN PAY BY STANDING ORDER: FORM OVER PAGE)

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## SUBSCRIPTION RATE FOR 1993:

A) PAYMENT 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:- JOHN LEAK, G0BXO, FLAT 7, 56 HEATH CRESCENT,  
HALIFAX, HX1 2PW. ENGLAND

FOR PAYMENT IN U.S.A.; FRANCE; GERMANY; THE NETHERLANDS:  
SEE ADDRESSES ON PAGE 24 AND THE MEMBERS HANDBOOK.

ALL CHEQUES MUST BE MADE PAYABLE TO  
"G QRP CLUB"

The law concerning crossed cheques has been changed and it is now difficult  
to pay cheques made payable to club officers into the club's bank account  
PLEASE DO NOT MAKE CHEQUES PAYABLE TO INDIVIDUAL CLUB OFFICERS  
AS WE MAY HAVE TO RETURN THEM

**UK MEMBERS : PAY 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 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"  
TAKE THE FORM TO YOUR BANK**

To  National Westminster Bank

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

0 4 1 0 9 5 4 6

**G QRP CLUB NUMBER 1 ACCOUNT**

for the Credit of

Amount in Figures		Amount in words	
£	£5.00	FIVE POUNDS	
Date and amount of first payment	15/1/93	£	5 - 00
Date and amount of last payment	-----	£	-----
<b>G QRP NUMBER:</b>			

† the sum of

commencing

\*-until

quoting the reference

Due Date and Frequency

**ANNUALLY ON  
JANUARY 15th**

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 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 QRCI

They should be sent to;

**Luke Dodds WSHKA, 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 29091) Er wird die Sammelüberweisung und alle dazu notwendigen Informationen nach England an John G0BXO 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 1993 bis spätestens 31 Januar 1993 auf folgendes Konto:

Postgiroamt Ludwigshafen Bankleitzahl-NR 545 100 67 Konto NR 23292-672

**Rudi Dell - Sonderkonto**

**Weinbietstr. 10**

**W 6737 Bohl - Iggelheim**

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

### THE NETHERLANDS

Nederlandse leden kunnen hun Lidmaatschapsgelden storten op:-

**Postgiro 2730858 T.N.V. HALPIN, HENGELO**

ALTYD Uw call and Lidmaatschapsnummer Vermelden

De contributie Voor 1993 is vastgesteld op HFL 21.50

LET OP!!! Stort Uw bydrage voor 30 January 1993. geld ontvangen NA deze datum en/of stortingen zonder vermelding van call and EN lidmaatschapsnummer worden onder aftrek van gemaakte kosten teruggestort.

**Vor meer info. bel Peter, PE1MHO. 074 771832**

### FRANCE

As stated in the Members Handbook French members can renew via

**Paul Bel FB1MQO 14 Ave de Rodez, Carmaux, 81400. France.** The rate is 81.40f.

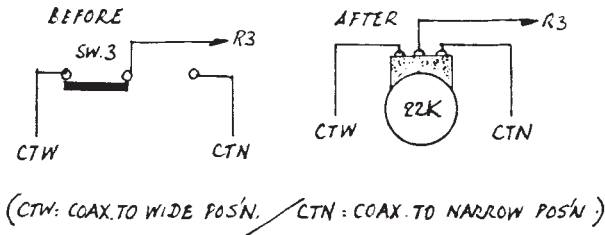


# SIMPLE HW9 MODIFICATIONS

Bernhard Szymaniak DL7GK  
Fritz-Remy-Str.9, D-6050 Offenbach/M, Germany

## HW9 - Variable CW Bandwidth

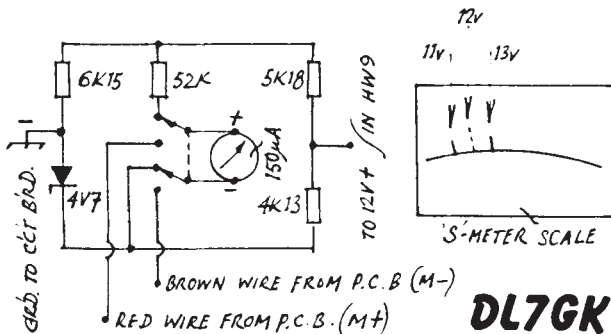
I replaced the selectivity switch SW3 (refer to handbook page 66, detail 3- 12B) by a 22 k linear pot, see sketch



The coax cable to AF-gain-control R3 is now soldered to the pot-arm, the remaining two cables to the pot's other two solder lugs. Values from 10k to 22k are acceptable. No mechanical work has to be done when using a mini-pot which fits through the already existing square-holes left over from the disassembled slide-switch SW3.

## HW9 - Using the S-Meter to monitor battery-voltage.

Running my HW9 "out of a suitcase" I considered it useful to frequently check the voltage of built-in gel-cells. My solution to this was a simple bridge-circuit, see sketch. Desolder the red and brown wires from the meter and solder them to a DPDT-switch mounted anywhere in a convenient place. Resistors and a Zener-diode are soldered on a piece of perf-board. The meter in my HW9 needs 150 uA full-scale, all resistors were chosen with respect to this value and to have a reading of 11 volts at fig.1 and 13 volts at fig.3 on the meter-scale. This requires odd-value resistors which I made up from series, or parallel, connected values at hand. 12 volts is read halfway between fig.1 and 3 so the voltage can be estimated with good accuracy. I think this kind of reading is easy to keep in mind. Expanding the meter reading 13 volts full-scale would have required redrawing the meter face or using an instruction-sheet both of them I thought to be inconvenient. I don't know if Heathkit supplied meters with different full-scale sensitivity in the production-run, so check out carefully not to burn it up.

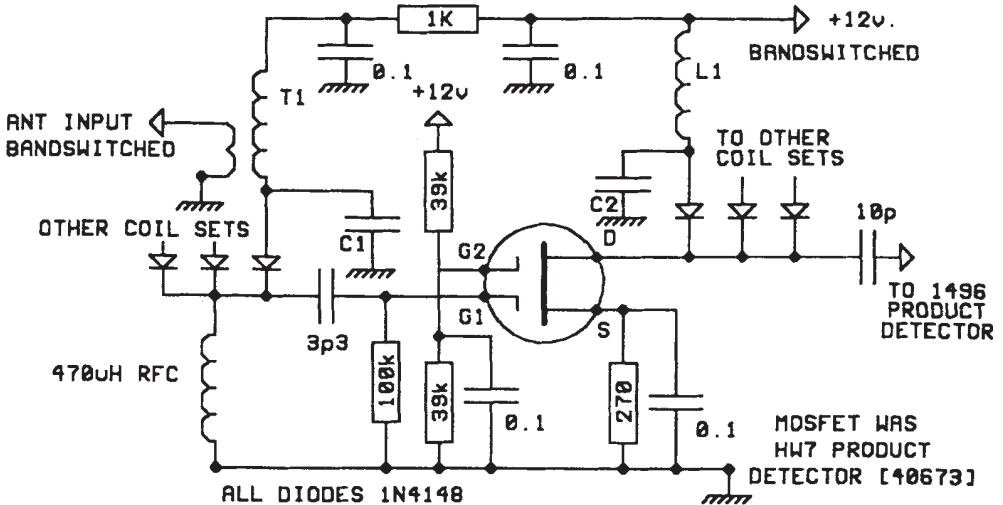


**DL7GK**

## THREE BAND RF AMPLIFIER

Suitable for the HW7 or other Receivers/Transceivers  
Steve Hartley G0FUW

Having Modified the HW7 [see SPRAT and Club Circuit Handbook p.69] I was a little disappointed with the results. This RF Amp was added to give the little radio a new lease of life. It is based on that of the HW8 but using Toko coils and a dual gate MOSFET [see Hotwater Handbook p.24]. For clarity only one set of coils is shown.



BAND	T1 + L1	C1 + C2
40	KANK3334	100p
20	KANK3335	47p
15	KANK3335	27p

**3 BAND RF AMP**  
**STEVE HARTLEY**  
**G0FUW**

## THE KRISTA IAMBIC KEYS

Described By Wallace Shackleton GM0GNT

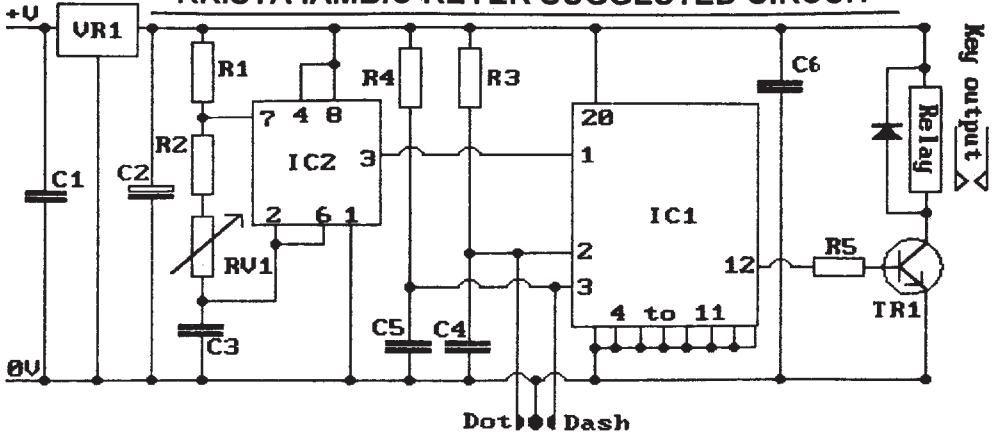
John, GM4ANB, came up with the idea of using a Generic Array Logic chip, (GAL16V8) to do all the hard work and found an extremely good method of iambic keying in the process.

The GAL16V8 (IC) is electrically programmed with all necessary keying logic and character memories to generate morse. ICI is static sensitive so it is good practice to take precautions especially so when handling expensive i/cs, and ICI is no exception. The keyer after a good check for solder-bridges etc. worked first time.

The keyer pcb consists of four parts; the GAL i/c, a 555 timer, a voltage regulator and a relay driving circuit, all on a 2 x 1 1/2 inch pcb. The keyer pcb is fed via a 7805, 5v. voltage regulator and draws 35mA. so there should be no problem with using your rigs 12v power supply.

My keyer is fitted inside my Ten-Tec Century/22, running from the rigs supply. However it should be possible to put it into a reasonable small box, big enough for the keyer pcb, jack plugs, speed control pot and a small transformer.

## KRISTA IAMBIC KEYSER SUGGESTED CIRCUIT



### Resistors (all 0.25W)

R1, R2, R5 : 5.6k $\Omega$   
 R3, R4: 10k $\Omega$

### Transistor

TR1: BC184 or similar

### Integrated circuits

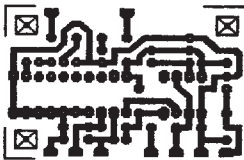
IC1: KCL002  
 IC2: NE555

### Capacitors

C1: 0.22  $\mu$ F  
 C2: 10  $\mu$ F, 15V electrolytic  
 C3: 0.1  $\mu$ F  
 C4, C5, C6: 0.01 $\mu$ F

### Miscellaneous

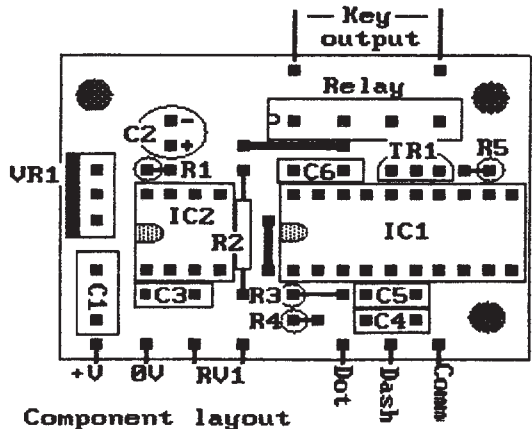
Relay: 5V, max coil current 30mA.  
 VR1: 5V 1A regulator (7805)  
 RV1: 50k $\Omega$



PCB Layout (track side),



BC184 (pin view)



Component layout

### Ordering information

The KCL002 IC is available at £4.95. A kit of the PCB and all PCB components (including the keyer chip and output relay) and RV1 (speed control) to build the circuit as shown for £16.50. A build and tested PCB is available for £21.00. These prices include VAT, but please add £1.00 per order to cover post and packaging.

The IC and kit are available exclusively from:

Kirsta Computers Ltd, 35 Main Street, Hillend, By Dunfermline, Fife, Scotland, KY11 5ND.



## G3ROO's CONSTRUCTION COLUMN

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

Due to pressures at home I have had little time to work on anything for SPRAT, lots of things are in the pipeline at present, but nothing that is complete enough to offer.

This edition will concentrate on a few updates that have come to light in the various articles offered, the first is going to cover the Synth where we have discovered a few errors that may be causing problems. Many thanks to various members that have helped by letting me know when they find a problem.

Firstly, on page 25 Sprat 70, the 10n capacitor shown superimposed on transistor Q13, the 2N3904, should not be there! The 17m VCO the circuit diagram shows no C31, in fact there is a capacitor used across the inductor and its value should be 39pf. I have improved the biasing of the output amplifiers considerably by the following component changes. R65 33K, R66 15K and R78 7K5. I have been advised that for Q14,15,16,17 BFY90s can be used. I have used BC183s but the output is low at higher frequencies. Finally the anode of V8 should be earthed.

The next Hints and Tips concerns the LCK in Sprat 60. This little transceiver has proved to be a little gem with one or two minor points that may not be known to all! On page 6 the two NE602s have 1K8 resistors from the 9 volt supply to pin 8, this value should be reduced to 180 Ohms which should hold pin 8 at about 7 to 8 volts, if it is any higher than 8volts increase these resistors to 220 ohms or even 270 ohms, pin 8 must not be allowed to be below 6 volts. Another useful mod is to remove the 10n between the secondary of T4 and pin 1 of the NE602 and wire it on the underside of the board between the drain of the dual gate mosfet and pin 1 of the NE602, this will increase the output of the receiver considerable when T4 is re peaked (very flat peaking) Oh yes, the value of C13 across the primary of T4 should be 22pf. Further increase of gain can be obtained by bypassing the 100 Ohm resistor in the source of the mosfet, but this may result in instability and should be done with caution.

Sorry that the offering is so little this time but I am hoping to have a very interesting little project for next edition... Am working on it at present.

### **ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS**

FOR SALE : TEN TEC CENTURY 22, SEM Audio Filter [Multifilter] Both in mint condition.  
Write to: Noel Cameron, EI4DZ, 16 St. Mary's Cres. Westport, Co. Mayo, Eire.

FOR SALE: TEME, VFO/TX/ATU/SWR etc CARLTON RX [80-40-20] Unused £45. Regulated PSU 12 amp 15 amp surge £30. all + carriage or £100 the lot carriage paid. GW3FSW 0745 570538.

FOR SALE: New Zenith PC 286 2x3.5 drives, 640K memory, 3 ports, colour monitor and keyboard DOS 3.3, all books £275. Modem Slot Card for PC £25. Portable Modem New £25. 60meg Tape Streamer £55. G4EFX 0422-842229. [Hebden Bridge, W. Yorks]

FOR SALE: RX1155, Modified 80 thro' 10 metres, Built in PSU £30 ono, Dragon 32 Computer, OK on RTTY £25, Minimitter TX Top2-7, Working on 160/80, fault on 40, [no info] £10. WANTED: Manual or info on Realistic DX160 [or copy]. Howes CVF20 VFO. Larry, G4HMQ, QTHR or Tel: 0922 415078.

FOR SALE: QRO PSU 1000v 250mA, 300v 20mA, 40v 1mA, 28v 300mA, 8v 100mA, 24v 4A, 12v 700mA, £10, Two PYE BANTAM HP1FM with Batteries and charger OK for 2 Metres £15. Numerous HC25 xtals between 12.108 & 12.175MHz, 13MHz & 13.066MHz all at 20p each. Mike Osborne GM3YGM. 0475 522062

# SCOTTISH AMATEUR RADIO CONVENTION 1992

## A Report from Ty Nicholson GM0LNQ

A rather disappointing exhibition for the premier Scottish event of the year with a number of traders not turning up. My sympathies go out to the Glenrothes ARC who had done so much to welcome both traders and visitors alike and make the event a success.

Only one local trader, Jaycee Electronics, attended with a full display of equipment from the three major Japanese and other manufacturers along with a varied selection of used equipment. Only one other 'black-box' supplier attended with a rather limited range of products.

Mainline Components and JAB Electronics, along with Greens, were on hand with components, spares and the usual plugs and connectors. Four other companies were selling spare parts and ex-equipment bits and pieces and a couple of stands were offering computer software. Add the RSGB and Interbook bookstalls, the DTI, WAB, BYLARA, RAFARS and Antenna Specialists with their selection of antenna's, coax and connectors and there you have it .... almost.

QRP and home construction were well supported by our own club stand offering both G-QRP Club items and books as well as a range of kits from Kanga Products. Our offerings were complimented by the presence of both Jandek and Badger Boards who had a full range of products available. Oh, I almost forgot the half dozen tables selling cakes, ear-rings, off-the-shelf spectacles and knitwear!

Some forty five members 'signed-in' and my thanks to George GM3OXX and Dave Stockton GM4ZNX for spending time on the stand and a special thank you to Nor GM3RKO who took time off from his wedding preparations in order to deliver the notice boards and later visit the exhibition. Our congratulations to you and we wish you and your bride all the very best for the future.

The club's free raffle prize of a 80 metre 'Sudden' receiver, kindly donated by Dick Pascoe of Kanga Products, was won by Barclay GM4OMU. I was kept busy all day with the sale of club items and the signing up of a dozen or so new members. We were expecting to hear that the confederation of Glasgow clubs are to host the convention in 1993 but no announcement was forthcoming. Anyway, the Aberdeen ARS is planning to host SARCON in 1994. Remember 1988, when we set the standard?. Write it down in your long term planner now!

### **ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS**

**FOR SALE:** MIZUHO SSB/CW Handheld QRP Transceiver for 80m, with whip antenna, speaker/mike case and instructions, excellent performer £165, YAESU FT690 MK2 6m Transceiver, good condition, hardly used, complete with whip antenna £295, BNOS 6m Linear Amplifier £65, BNOS 10A PSU (for the Lin.Amp.) £75, 6m 2 element beam £20, 2m 7/8 mobile whip £17, White Rose Receiver Board with converter for 40m £25. Moved QTH cannot at present operate. Reasonable offers considered. Call David on 081-317-2223.

**EXCHANGE:** I have a Howes 20m TX/RX/VFO in the nice box. Also Howes 80m TX/RX with spare crystals, but not in a nice box. I would like an HF RX in good condition. Jim Harrison, G0NTR, 43 Churchfield Court, Walton, Peterborough, PE4 6GB.

**WANTED:** The book "Radio Radio" by Jonathan Hill. Bob, G0FTO Tel: 0204-63914

**WANTED:** Any information of the Electronic Multimeter Type 471. Made by G.E. Bradley for MOD. Ron Brooks, G3YLL, 10 Leopold Cl. Bognor Regis, PO22 8JJ. 0243 828377.

**WANTED:** Roller Coaster Coil Unit, About 1¼" dia. approx 28/30 turns

Also **INFORMATION:** Can the method of adjusting QRP output on the TS130V [shown a number of times] be used on the ICOM IC-730 Transceiver to get down to say half a watt. Any suggestions welcome. G2BCY, QTHR or Tel: 091-2654780

## "CODE FREE LICENCE"

Attempts are being made to introduce an HF Licence in the UK with no Morse Test. The introduction of such a licence would not only put existing QRP CW Frequencies in Jeopardy, but would also eventually lead to a break down in Band Plans. Also, as the construction of simple QRP CW equipment is now one of the last bastions of amateur radio home construction, it would eventually lead to the end of that area of amateur activity. We as a Club therefore oppose this form of licence, and will lodge our formal opposition with the RSGB HF Committee. For our opposition to be fully effective, it requires massive support for individual members. Please write, expressing your opposition, to Chairman, RSGB HF Committee, Lambda House, Cranborne Road, Potters Bar, EN6 3JE, marking the bottom left-hand corner of your envelope "Code Free Licence". If you value your QRP Operating - WRITE TODAY.

A.D. Taylor (Communications Manager)

## RULES FOR THE ANGLO-CZECH/SLOVAK WEEKEND 1993

1. Dates and times. 0001 gmt 28 February until 2359 gmt 29th February 1993.
2. Frequencies, 3560, 7030, 14060, 21060, 28060 and 10106 kHz, all plus or minus QRM.
3. Power 5W maximum, CW only.
4. Contacts shall be between stations in the UK and stations in the Czech Republic (0k1 and 0k2) or the Slovak Republic (0k3). Each station may be worked twice on each band, once on the 28th and once on the 29th of February.
5. Multipliers. Each Ok prefix counts as a multiplier, giving a maximum of 3, and each UK country counts as a multiplier giving a maximum of 7.
6. Scoring. Each contacts scores one point. The final score is the total of QSO points multiplied by the total number of multipliers.
7. Contest exchanges. Stations must exchange RST, a serial number beginning with 001, and power. For example 569001/3. Power less than 1w should be sent as 01 (100mW) and so on.
8. Separate log sheets showing date, time, call of station worked, and exchanges sent and received must be used for each band. A cover sheet showing name, callsign, address, claimed score, and brief station details must also be provided. Logs must reach the organisers by 31 March 1993.
9. The organisers are:

Czech and Slovak Republics;  
P. Doudera, OK1CZ,  
ul baterie 1,  
16200 Praha 6,  
Czech Republic.

United Kingdom,  
A.D. Taylor G8PG  
37 Pickerill Road  
Greasby  
Merseyside L49 3ND  
England.

10. Suggested times and frequencies. 0600:0800 3.5/7 MHz. 0800:1100 7/10.1 MHz. 1100:1500 14/21/28 MHz. 1500:1800 21.13.101.1 MHz. 1800:2000 10.1/7 MHz. 2000:2400 7/3.5MHz.
11. Certificates will be awarded to the three leading stations in each of the three countries. The organisers may award additional certificates for outstanding milliwatt work.
12. In the event of any dispute the decision of the organisers is final.

## INDEX OF SPRAT ARTICLES

A new index of SPRAT articles up to this current issue has been prepared by Ted Avery, G3WBB. It is available to members by sending a self addressed, stamped, envelope (SPRAT size) plus an extra First Class Stamp to:

**Rev. Trevor Walker, The Rectory, Binbrook, Lincoln, LN3 6BJ**

As a new Club Service Trevor will be offering reprints of articles from past issues.

Details of this will be found in the index.

## QRP COMMUNICATION FORUM

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

QRP EXPEDITION INFORMATION OFFICER. Peter Barville, G3XJS, has kindly volunteered to provide this new service for the Club. In future Peter will co-ordinate all information on QRP expeditions which may be of interest to our members. This means that any member planning a QRP expedition should inform Peter, giving fullest possible details. Peter will also monitor overseas publications for such information. If at least four months notice can be given, the information will be published in the QRP Communications Forum in the next SPRAT. Where less notice is given, Peter will only inform members who have placed themselves on his information request list. To be placed on this list members must initially send to Peter two self-addressed, stamped envelopes (UK) or two self-addressed envelopes and four ircs (overseas), and must replace these envelopes as they are used. Peter will then send these members details of expeditions which arrive too late for inclusion in SPRAT. Whether you wish to inform Peter of a proposed expedition or wish to be placed on the information request list, please address all correspondence to Peter Barville, G3XJS, 40 Waitchet Lane, Holmer Green, High Wycombe, Bucks, HP15 6UG, England.

MONACO (3A) A Principality having an area of only 189 hectares, and heavily built-up, is not an easy place for a QRP DX-expedition. But by careful planning Peter, 3A/GXJS/M, was able to give a number of members an exciting new country on QRP between 0500z and 0800z on 14th August, 1992. An early start was essential for two reasons. Firstly, to find a spot to park the car, and secondly to make operating conditions bearable (even so Peter was feeling the heat by 0700z). Operation was at the 3 watt level, and the antenna a mobile whip. The results were really outstanding, with all Europe being worked on 7, 10.1 and 14 MHz. In Northwest England the best signals were on 10.1 MHz, but contact was quickly made on all three bands. The strength of many genuine QRP signals from Europe on 10.1 MHz was quite a surprise, as was that of some non-members whose interpreting of QRP seemed rather liberal (probably just switching off the KW linear!). Peter's wife and children thought that Monaco was great in the early morning, so we may well see another such expedition in the future. Many thanks Peter.

CORSICA (TK) was also the scene of DX-expedition by out member Don, TK/G30ZF/P, who gave a number of members a new one on two-way QRP during July. The QTH was St Florent, and Don ran 5w to a 6m high vertical for his QRP work. Thanks for a nice one, Don.

THE RUSSIAN QRP CONTEST on 22/23 August was hit by appalling conditions producing low signal strengths and deep QSB. QRP work was possible with western Europe, but no Russians were heard at the G8PG QTH.

THE EUROPE FOR QRP WEEKEND looked as if it was going the same way in its early stages, but then conditions improved vastly and there was lots of activity, including the appearance of TA2ZD/qrp, operated by Don, W3RDF, a QRP ARCI member on vacation. He was running 3w to a wire thrown over a tree. G4JFN, G3XJS and others worked him. At the time of writing we know at least 15 European countries were active, and also UL8EWR/qrp. As always the Czech/Slovak boys were out in force, including OK QRP C HQ Station OK5SLP, and Resistance Radio commemorative station OM5MCP. Once the logs have been checked in Praha we hope to give a fuller report.

CONGRATULATIONS TO BRIAN GM4XQJ, on being the leading 1 watt station in the 1992 RSGB Low Power contest. Well Done OM.

THE DOUBLET ANTENNA was brought to our attention by Frank, G3YCC, on page 29 of SPRAT 72. One only has to listen to the big signals put out by QRP stations using this multi-band antenna to realise how good it is. An interesting variant which is new (at least to me) has been brought to my attention by Peter, DJ00GD, and Vince, N2AXV. It is described "73 Magazine", February 1984m page 10. In this



version the normal open wire feeder is replaced by two lengths of co-axial cable, the inner conductors of which are used as the two feeder wires. The screens of the two cables are soldered together at the top and bottom of the feeder, and the bottom connection is earthed. The length of each side of the top is found for the lowest desired frequency by using the formula.- Length in feet =  $\frac{189}{f}$  in Mhz

The length of the feeder must be at least 20% more than a quarter wave at the lowest operating frequency. The advantages claimed for the antenna are (1) the two feeder cables can be run close to walls, ground etc. with no losses and provided they are both kept at the same length, could even be run back to the rig via different paths (no need for precise spacing) and (2) as the feeder is now screened, local noise pick-up can be reduced by as much as 30 dB. Peter, DJ0GD has used this antenna extensively at his summer/p QTH and says it works extremely well. He also feels it should be possible to load it up one the below its design frequency. Peter used RG174 in his version, but suggests RG 58 for use at a home QTH. Any reports ton this one to G8PG please.

ROCKEY, W9SCH has found an 82 year old version of the Up and Outer. No hf then, so this is a base loaded 1f version, with curves to show better efficiency than obtained when using one half against ground. (Dr G. Pierce, "Principles of Wireless Telegraphy", New York, 1910) Nothing new in this game!

CONGRATULATIONS TO SM6SLC, SM6MOX AND SM5CCT, our members who took the first three place in the 1992 SCAG QRP Cub contest.

AFTER A POOR SUMMER conditions improved dramatically in the second half of October, with the two-way trans-Atlantic path open on 21 and 28 MHz on many days. Signals from VE2KN and KB1FK were particularly outstanding. It may be that one reason for such good signals was that although the F2 layer ionisation was probably a little lower than in recent years, the ionisation in the lower ionospheric layers was probably much lower, thus considerably reducing attenuation of signals passing to and from the F2 layer. Signals were peaking between 1400 and 1500 gmt, which was two to three hours after sunrise on the east coast of Canada and the USA.

MORSE PROFICIENCY TO NEAR-PROFESSIONAL STANDARDS. (20 words per minute or above) is the goal of many of our newly licenced members, a number of whom have already achieved this standard. These are "amateur amateurs" in the sense that they have had no professional training, which makes their achievement even more outstanding. Although it is likely to take a number of months of consistent hard work and dedication, these are few amateurs who cannot attain this sort of standard if they put their minds to it. For those against elitism" (that horrible modern word) morse is also a great leveller. I have seen a Doctor of Philosophy sweating blood to copy 12 wpm, while the construction site worker sitting next to him was taking it with ease! That is what our hobby was, and still should be, about. Carpenters could rub shoulders with kings, and often advise the letter on operating or technical points. A man's signal and fist were what mattered, not how many thousand pound or dollars worth of black boxes sat in his shack. At least in QRP we still retain much of this approach. Long may it remain so.

ALTHOUGH NOT A QRP OPERATOR it is only right that we should pay tribute to the memory of "Dud" Charman, BEM (G6CJ) who died recently. Famous as a DXer, Dud trained hundreds of amateurs in antenna fundamentals by means of his famous lectures, and as a professional engineer had much to do with the development of the wideband distribution amplifiers used at wartime intercept stations and later at some hf coast stations. With some versions using 75w 807 pa valves as receiving rf amplifiers in circuits designed to couple a single, wideband antenna to a number of receivers, these amplifiers pioneered the idea of "bombproof", cross- modulation free front ends. And very effective they were too!

W3NQN 530Hz audio filter kits were on sale at the recent, very successful Rochdale Convention. I am not sure if there were any left over, but what I am sure of is that this is one of the finest af filters ever

produced. If you are a keen cw operator you should try and get hold of one. Placed between the 8 ohm output socket of a receiver and 8 ohm phones, it does an amazing job of removing nearby interference. The electrical performance of the filter is backed by centre frequency chosen, which lies within that part of the audio spectrum where the human ear provides its most effective frequency discrimination, this allowing that other great aid to cw reception, the human brain, to function at its best. To my mind this is a form of ergonomics, and one which has been very much neglected by the cw operating fraternity until our Club undertook Project Frequency Band.

**NEW QRP MASTER.** Congratulations to G2HLU on achieving his Master.

**AWARD NEWS.** Congratulations to the following.

**QRP WAC.** G0KJN, HL9BK.

**QRP Countries,** 175 DJ0GD (Nice Peter); 150 G0IFK; 100 G2DAN; 75 G2HLU, G13DQO; 50 HL0BK; 25 G4LAV, G0KJN, G0FRD, G0OXT, G4IUP.

**WORKED G QRP Club.** 860 G4JFN (Nice Bob!); 280 G3FCK, G4CFS; 200G0NEZ, G0OGN, G3GVY; 140 WN2V, G4PRL; 120 G0KRT; 80 G0KCA. G0KZO; 60 G0OXT; GW4ITO; 20 G0NTR, G4EHU, DL6BQ, DJ7RU.

**TWO-WAY QRP.** 60 G3XJS (Nice Peter); 50 G3DNF; 40 DJ0GD; 20 G0DGN; 10 G0DXT, G4IUP.

One wonders when the first Uk Novice will apply for a Cw Novice Award (See your Members Handbook for the Rules.)

## QRP CALENDAR 1993

1 January 1993	Last day of 1992 Winter Sports (NOTE 1)
27 - 28 February	OK/G QRP Weekend, Rules in this issue
3 - 7 May	Yeovil Fun Run. Yeovil Convention 9 May Info from G3CQR
29 May	Fun Run logs to G3CQR
17 June	International QRP Day. QRP Plaque. Rules in Members Handbook
17 July	QRP Day logs to G8PG
1 - 3 October	Europe for QRP Weekend. (Rules Later)
10 November	Europe for QRP Weekend logs to Organisers
26 - 31 December	Winter Sports 1993

NOTE 1 Winter Sports Logs to G8PG by first February

NOTE 2. No information has yet been received on Russian QRP events in 1993. If information is received it will be published in SPRAT later.

## NOVICE NEWS

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

Thank you for reading this Novices Column - we see a great surge of interest in QRP Novice/Newcomers to QRP Operating which is most gratifying for our ever growing Low Power (but high in Skill) Club.

### Correspondence Received

Trevor 2W0AAI - running 3W from Mid Glamorgan writes: Thanks for the nice QSO/Letter Dave. I am Disabled and often use my Oxygen Mask on while in QRP QSO hi! Please let me know abt G QRP Club (done). Ian 2E0AAU writes: I dont think I am a typical Novice I am 50 yrs old hi! I started in 1955 when I was 13 Yrs old. I have not taken the RAE and got Distinctions in both papers I use a Ten Tec QRP Rig plus a Mizuho QRP Rig. My 15 M set - up is a wide range VFO into a DC Rx with an SL6440 Mixer. My Tx is from the ARRL and runs 3 Watts also VXO control. For 10Mhz I run 2 Watts from a Jandek DCRX/VXO with a home made Audio Peak/Notch Filter/and in the pipeline a DSB/CW Tx/Rx 80m/160M Rig is planned. As you can see my main interest is Home - Brew QRP/CW. Alex - G14MBO sends: "4 Novices worked all on QRP HF (80M) inc: 2E0ABO/2E0ABC (she is in there again!!) 2E0ABH (who hasnt!) and 2E0AAU Ian." Was delighted for them to get GI/QRP Land" Well done Alex.

Gerry - G3MCK also comments "I spend much of my time working the newer Licences, using a slow "CQ", or looking for them. Its really to repay the many kindnesses shown to me when I was first Licensed. If we do not encourage the new Ops on the Air - we might not have any to work in the future." "Like you - I too get sad when reading some of the Amateur Radio Press - they give the impression that the great Hobby is expensive and boring."

(Personal note : I agree with Gerald - but we must note that Practical Wireless is just about the best REAL (apart from RadCom - the set standard) AMATEUR RADIO publication on the bookshelf. George 3RJV is very active here; but Steve Ortmayers (G4RAW) articles on simple QRP Rigs in PW are great. The recent Simple Ten will generate much interest on 10.106 I would think.)

A really great Letter from Stuart es Keith Goodwin; GN0CAQ and 2M0ACT (Father and Son respectively). Stuart sends: "Thanks for the excellent Summer Sprat. Both Keith and myself look forward to the LEM Key Review. Keith can be copied most evenings on 3.565/3.576 Mhz - his Rig is an Ten Tec Argosy which is ideally suited to Novice use; and his Aerial is a W3DZZ (A trap dipole). Believe you me David - his face is a picture with every contact he makes and what gives me a bit kick - is when he QSO's in French!! The Novice Instructors should be congratulated. Thanks to all who have written in; believe me when I say that the above is only 30% of the Letter received.

### Slow Morse Code

You can listen to your local 2Mtr RSGB (?) Transmissions if you want to - but my own recommendation is to go for the HF ones. Locally - we enjoy GBCW run by the Edgware es District Club (Opr is John Bluff G3SJE) They are one every Monday evening on 1.976 at 20.30 Clock Time. They - like most others commence at 3WPM ang o up to 14 WPM. A good service.

Another good one ia PA0AA - the Dutch National on 3.602 every Friday Evening. Times are not definitely known here - but about 19.00 Clock Time seems to bring something in. You can QSL to find out more - and they are NOT QRP Hi! Youn ought to be able to copy them very well. They also feature Propagation/Dx In,fo etc.

### Novice Survey '92

During the Month of July 1992, G0NEZ conducted a survey of Club Novices to find out what they are active on, and what their Amateur Radio interests were/are.

A total of 10 Class A Novices were sent a very simple questionnaire plus a reply paid (SASE) Envelope for a reply.

Out of the ten questioned, 5 replied. Considering their very mixed age group this is thought to be very good. I will not set down a "sheet" showing figures, but rather, will describe the survey in plain language.

1. They wanted more (and wider) Frequency Allocations. ie when 15M (21.100 - 21.150) is "dead" for Dx; they want 14Mhz.
  2. No one mentioned 7 Mhz. My own opinion is that 7.030 - 7.040 wouldn't have problems at all. Indeed - the excellent behaviour and quality of the Novices Morse is so good that it may encourage an increase of quality on 7 Mhz!!
  3. There were some mention of the comparison of power difference between the USA (why always USA?) of their 70W to our 3W. BUT not one wanted more POWER. Interesting thus.
  4. I asked most if they were interested in home made gear/aerials etc.
  5. The answer (remember we are talking to many 12 year olds here) was that (it seemed to me) the very basics were understood. I feel, actually working them every (well - NOT every - but as often as I can - nearly every evening on 3.565 - 3.568) they are VERY good operators. I hope that they will go on and I think many - probably more than us G0's will be active Home Brewers. I expect a return to the heady days of the early 1970s. I really do feel that.
- I hope this reassures the "No Novice" brigade which was.

### UHF/Novices

So far absolutely nothing regarding the 70CMS Novice Allocation. Frankly - I am not surprised. Any Novice is unlikely to work any Dx on this Band. Reading some of the Radio Press which Gerry G3MCK rightly refers to - is not going to encourage them. So - if you are a Novice working through your Local 70 CMS Repeater, why not try for the easy peasy 5 words per minute Morse Code Test. 5 Words a Minute is dead easy. No trouble. If people who are disable or blind (ie St Dunstons or the RAIBC) can do, so can you! And then you can build/buy a cheap HF QRP Rig (MAPLINS are advertising the good RAMSEY kits, or the NEW QRP MFJ 15 MHZ QRP CW Rigs at good prices) Then - you can work the Dx using about 3 - 5 Watts. If you think that one can only work Dx using very high power you are WRONG! Just look at the Awards News in SPRAT. Using 3 - 5W I have worked 260 Club Members on various Bands; 30 Two Way QRP and 55 DXCC Countries. You can do it too. Forget your Local 70Cms Repeater. Its OK for Local friends contacts - but what about REAL Amateur Radio? I know you have Home Work to do, you should be getting along with it the best you can. School work comes first.

### Propagation/Dx News

Gus G8PG reports that the Beacon on 10.149 (DK0WCY) is very good and is giving reports on Sunspot Counts, Flux Numbers etc every 10 minutes starting every hours. Yes - Gus - it was promised in English wasn't it? I wonder what happened. If you are a Novice with a decent Rx look out for it - it is very good. If you can afford £5 look out for the Geoff Watts Dx Guides to World Amateur Radio Prefixes/Suffixes (which are now changing almost daily). The latest pack will give you 15 sheets of all the current World aforesaid, Oblast Maps, etc so in detail:

1. DXNS CQ/ITU Zones Guide (15 Pages)
2. DXNS USSR OBLAST GUIDE (15 Pages) incs 7 Maps; 250 USSR QSL Buros
3. DXNS DXCC Countries Guide (14 Pages) Alphabetical List of DxCC.
4. DXNS Radio Amateur Prefix/Country List (15 Pages)

Total Cost: (UK £5) Overseas Air Mail 4 USA Dollars + 8 IRCs NO FOREIGN CHEQUES. NO NOT CONTACT GONEZ. ORDERS TO THE FOLLOWING GEOFF WATTS 62 BELMORE ROAD NORWICH ENGLAND NR70PU

Finally - I would like to confirm that supplies of the first class NAT Transmitter Circuits were (1) Only for our Novices and (2) Supplies are now exhausted. If you would like info pse QSP to George Burt GM3OXX. I had 25 sets of the diagrams, which after the Autumn Sprat - were gone within 3 days hi!

May 1993 be a specially good year for you and your family.

## SSB COLUMN

Dick Pascoe G0BPS 3 Limes Road, Folkestone, Kent, CT19 4AU

A letter from Dave G4XNP arrived recently. He has been doing wonders on the bands with just 5 watts of SSB. He sent some photocopies of his logbook which made my mouth water.

Dave obviously agrees with my comments about using contests to gain a few extra countries. There is always one difficulty with this of course and that is getting a QSL card out of the DX stations. Club awards still require this card so do try.

During the contests over three years Dave has used SSB to net some very rare countries. Many high power stations would be proud of his log. On 8th October 1990 with just 500mW on 10, 15 & 20m Dave managed to net many North American stations including a couple of Canadians. In March of 1991 his 1 watt gained access to the USA once more again with several VEs. This time most of his operating was on 10m.

The log for this year, 24th October is the best, working mainly on 20m Dave hauled in some nice DX in the shape of: ZA1, 6V6, S57, 9K2, 7Z2, Tr8M, 5U7, ZF8, TJ1 and several more. All in all a very nice job. Well done Dave keep it up.

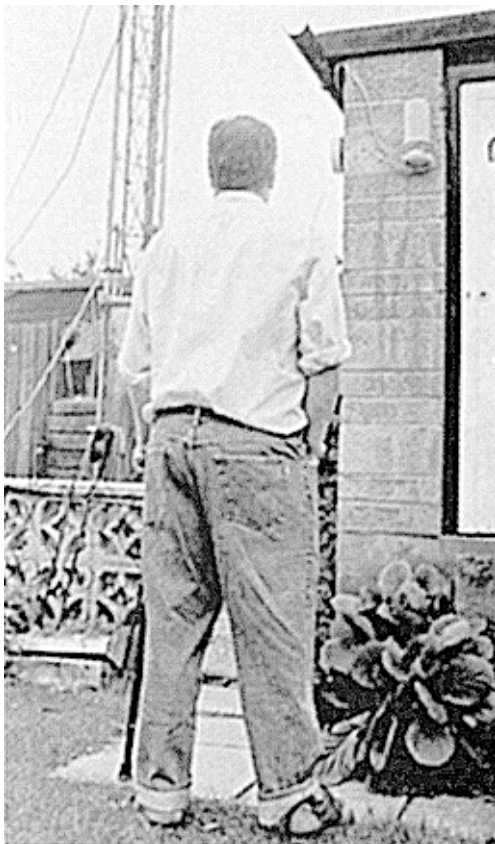
Dave's station consists of an Argosy 11 linked to an ATU and speech processor. The aerial is an delta loop for 80m fed with 300 Ohm ribbon.

### The Gathering

It was very nice to see so many old friends at the Club Mini Convention at Rochdale. I barely had time to sit and talk we were so busy. I love this event, after travelling to so many rallies, almost every weekend throughout the year it is so refreshing to have the time and space to sit and chat. I even managed to have a long talk with Petr, OK1CZ and arrange to meet him at Dayton.

The final this week is a simple competition, look at the enclosed photograph of a club member and tell me who it is, give his first name and callsign.

A clue: he loves pickled dragons. Officers of the club are barred from entering, a small prize for the first correct answer will be given.



PLEASE NOTE: That the address in the Members Handbook for our Membership Secretary, G0BXO, was given as North Yorks, it should be WEST Yorks.

WANTED: Complete QRO CW Rig for 18MHz band, Faultless with full info. John, G0KJN, 16 Priory View, Little Wymondley, Nr. Hitchin, SG4 7HG. Tel: 0438 362795

## MEMBERS' NEWS



### Chris Page G4BUE

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

Those of you who have visited my summer QRP parties in recent years will have met my good friend Al Slater, G3FXB. Many of you overseas members will have worked Al, possibly for your first QSO with England from far away places, as his antennas for the LF and HF bands were outstanding and this enabled him to copy weak QRP signals better than most. Sadly, his signals will not be heard anymore. Al passed away from a heart attack, very suddenly, on the 11th November. He was only 64 years old, very active and the current holder of several European contest records. I shall miss him greatly.

This copy of SPRAT should be arriving around the time of the Winter Sports. I have successfully applied for GBØQRP again. Let's hope the conditions are kind to us and please don't forget to send in your reports to Gus.

I have had many requests for copies of the information sheet on the Argonaut II offered in the last SPRAT. All requests have been dealt with. VE3REP has just brought the new Argonaut and the Model 290 attenuator and Garry's Kenwood 830 is now gathering dust! He used it at 1 watt to work me in the ARCI Fall QRP Contest. GM3MXN can hear the IF carrier at times on his Argonaut when the band is very quiet. Apart from that, Tom is pleased with it. He has built a two stage 700Hz active filter which "really draws the weak signals out".

G4EHT has just purchased a secondhand Argonaut 515 and is pleased with the performance of it, especially when it cracked a pile-up for an FY on 15 metres. GM3RFR is still using his 509 Argonaut together with an IC735 and lots of homebrew gear. Sam can get the IC735 down to 350mW using a modified Nevada power reducer and the drive set at minimum. He is experimenting with microwatting using an ex-Government CT443 wattmeter with a range between 1.5W and 20mW. GØOXT is up to 49/30 DXCC and is constructing the OXO, Sudden and Teme rigs. Chris talks of the friendship of QRPers and the sense of achievement that operating and constructing QRP has brought.

HB9AMZ has bought the new MFJ-9020 20 metre rig and has worked 9V1YC with it to a TH5 antenna. Kurt was in Thailand in July and August and although he made 300 QSOs, the only QRPer he worked was OH6NPV. He is going back there again next summer, so QRX guys! SM5LWC borrowed a DTR-7 from a friend and made 18 DXCC with 1W to a 13 feet high dipole. Gert has just built a 40 metre rig and should be on the band by now. GØOSR uses a DTR-3 rig. GØLWA says the Mizhuo 20 metre QRP rig is a "fine performer and very sensitive". LA2TAA has built a 3W superhet QRP kit and broke it in with a 2000km QSO. Terry says "I am sure you are familiar with the instant feeling of surprise one gets when a far away station answers your casual CQ."

KA2OIG/HR3 has now QSY'd to CT in W1 land for a while. Kris hopes to be QRV from somewhere in South America in 1993, QRP of course. W6SKQ went to KH6 recently for one of his regular holiday trips. Bob used a centre fed 111 feet zepp 35 feet high to fill 6 pages of log book including 14 on two-way QRP. UV3ALI uses CW and SSB for chasing DX with QRP. Eugen uses home brew gear and an FD-4 antenna and has worked into the UK with 1 watt SSB. G3XJS was delighted to work two-way QRP with UL8EWR and TA2ZD during the Europe for QRP Weekend. New DXCCs for Peter include V85XF, AP/WA2WYR and 9K2ZR.

I had the pleasure of meeting G4CEO and his XYL Maureen at the annual FOC Dinner at Lords in October. We found we have something else in common, other than a liking for CW and QRP! Bob has just brought one of the new

Jones paddles being advertised by Bredhurst Electronics of Handcross and is delighted with it. I have had mine since April and feel the same about it, but I must admit to being slightly biased as I had a hand in the design of it! You can adjust the position and spacing of the handles for your own preference whereas other paddles have them fixed, usually too close together or too far apart.

**GW3WVV** uses a TS850 wound down to 5 watts for QRP work and criticises the RSGB for not allowing rigs capable of delivering more than 15 watts to take part in the QRP class (5 watts) of their contests. Bob says he is surprised the G-QRP-C committee endorse this ruling and wonders the reason for it. I wasn't aware that the G-QRP-C had expressed any opinion on it, but I may have missed something somewhere. **G4BUO**, who is Chairman of the RSGB HF Contest Committee and a G-QRP-Club member, would be the person to contact to ask the reasoning behind it.

If you worked **3A/G3XJS/M** earlier this year you will have seen Peter's mobile set-up on his QSL card. He used a G whip for 30 metres and a Hustler for 20 and 40 metres. Peter has volunteered to edit the QRP column of Monitor, the magazine of the ISWL (International Short Wave League). **G3XJI** has tried the **G8PG** 7 band antenna for restricted locations, featured in SPRAT 64. Allen opted for the 10 to 80 metre version using two 33 feet top sections each with 23 feet folded at the ends and 30 feet of 300 ohm feeder. It is 25 feet high and works very well on 40, 20, 15 and 10 metres but not so good on 80. Allen endorses Gus's comments that this type of antenna provides a very acceptable solution for those with restricted space for the more traditional antenna farming'.

**GØBJJ** worked **PY7FNE** in April on 15 metres on two-way QRP. **EA3ERT** has built a new 28/144MHz transverter which gives 7W output on FM, SSB and CW. **G3MBN** is now back on QRP with "renewed enthusiasm". Brian is using a fully solar powered rig, mostly on 40 metres. It gives 2W out even in cloudy weather! **DJ1ZB** operated from Corfu, SV8 for a week over the Field Day week-end. Ha-Jo made 33 QSOs in Field Day and even heard **G4BUE/P!** During the following week he was QRV on the WARC bands and generated a pile-up on 30

metres. Ha-Jo later operated from the Caribbean as **8P9DE** and **J6/DJ1ZB**. He offers a tip to international travellers taking electrical gear with them - when packing for the trip home, switch everything back to 220V before you leave. Ha-Jo did this on his charger but his wife didn't on her hair dryer. Back in Munich their son went to use the hair dryer and...!

**GØSBN** asks if any member has a circuit diagram for the Ten-Tec crystal calibration unit for the Century 22 (model 579). Keep an ear open for **GMØRSE** as it may be **GM3MXN** or **GM4HYF** operating. More Club members are getting QRV on packet - Joe, **G7BEL** is @ **GB7ZZZ**; Des, **GØDEV** @ **GB7SEK**; Brian, **G3MBN** @ **GB7SDN**; **GØOXT** @ **GB7GLP**; **GØLWA** @ **GB7SAM**; **SM5LWC** @ **SK5AS** and **EA3ERT** @ **EA3RDG**. Much of the news on these pages came to me via packet. If you work **G4LRS** - beware! Jonathan says his call is being pirated by a "Ron in Bolton" and a "Gordon" who works mobile. Jonathan is using a 40 metre sloping dipole from his South Yorkshire QTH and has worked around Europe with 4W.

**GØHGA** is now using an **ETM5C** keyer which she finds much better than the **AEA MK1**. Angie uses a **TS520S** and can get down to 200mW with the carrier reduced to minimum. In her last letter she admits to using SSB occasionally! **G4CEO** has been trying his hand at milliwatting and worked an ON on 40 metres with 500mW almost by accident! Bob was tying out his new paddle using the sidetone in the rig when an ON4 came on frequency and called CQ. With the power setting at zero, and for want of something better to do, Bob called him and received a 579 plus some complimentary remarks. Welcome to milliwatting Bob!

**G3CQR** has sent in details of the 1993 Yeovil QRP Convention, which will be the 9th, on Sunday 9th May at the Preston Centre, Monks Dale, Yeovil. It starts at 9am and a programme has been arranged covering talks on propagation for 10mW DX by **G3MYM**, transmitting antenna basics by **G3MCK**, a construction project by **G3PCJ**, the Fun Run results and awards and a QRP Forum, plus the usual bring and buy stand, club stand (**G4JFN** in charge), refreshments, etc. Full details can be obtained from Peter (0935 813054). Let me know how your winter goes, by 20th February please. 73, Chris

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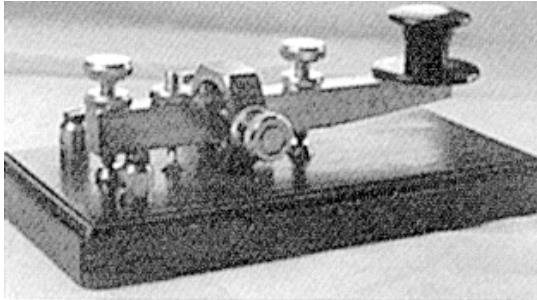
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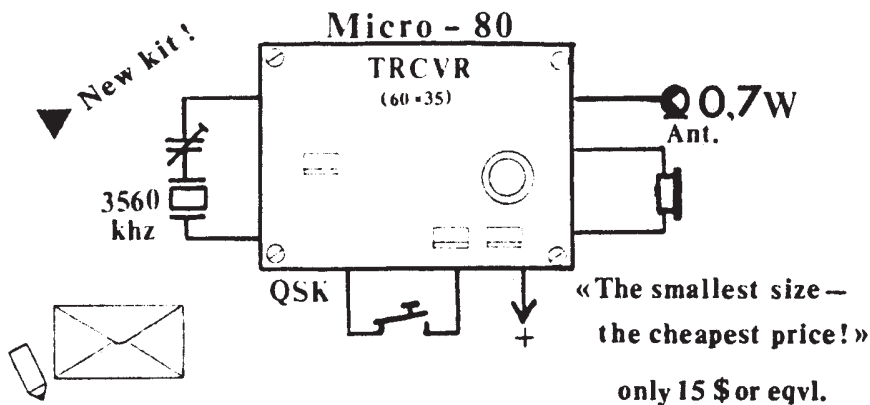
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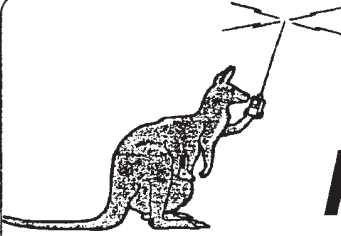
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