SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED·TO·LOW·POWER·COMMUNICATION

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DOUG DEMAW W1FB

A Tribute to Doug appears in this issue

TRIBUTE TO W1FB – CHRISTMAS PROJECT – TRANSMITTER KEY
THE MAIDENHEAD PIXIE – WEATHERPROOFED PL259
BALANCED DC RECEIVER – CW FOR EP2 [TWO METHODS]
ANTENNA MOUNT – LED SWR BRIDGE – THE MISER'S DREAM
EXTRA AUDIO FOR LCK – GQ2000 Pt.4 – MAKE A BOX
AF SPEECH PROCESSOR – A.A.A. – COMMUNICATIONS & CONTESTS
NOVICE NEWS – VHF – SSB – MEMBERS NEWS

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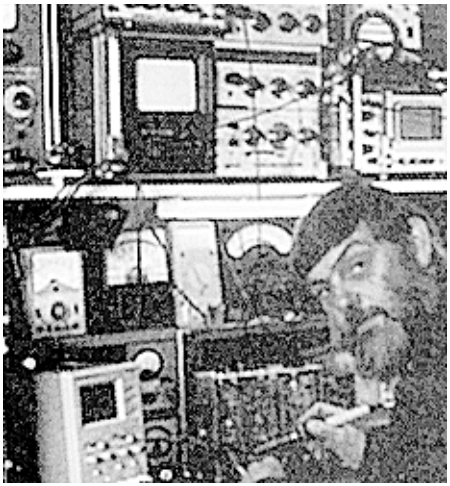
JOURNAL OF THE G QRP CLUB



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Homepage : www.gqrp.demon.co.uk

EDITORIAL :

Dear Member,

As some of you will know, there has been some chaos at the G3RJV QTH. At the end of September, my study was broken in to and all my computing equipment stolen. To compound the problem, the thieves used my metal filing baskets to carry out stolen equipment, so I also lost important papers and some of my correspondence. If you have written to me around that time and never got a reply – please try again! Thankfully all my working files were backed up on tape and I was able to restore all my vital files on to my replacement computer!

Although I did have some trouble with my replacement computing equipment, I am now back to full working order with rather better equipment than that which was stolen. May I thank everyone for their patience with me over that period. For a short time, mail and email appeared to be going into a black hole. Since that time I have also had trouble with an infected knee joint which reduced my general mobility for some time.

May I wish every club member a very happy and fruitful New Year in 1998.
Please do not forget to pay you subscription for 1998. We have some exciting new projects coming up in future issues of SPRAT. Perhaps we could feature your latest project?

72/3

G3RJV

EDITED BY GEORGE DOBBS G3RJV ARTWORK BY A.W. (MAC) McNEILL G3FCK
PRINTED BY SHOREHAM COPY, 3 JOHN STREET, SHOREHAM-BY-SEA. SUSSEX

M.F. "DOUG" DEMAW - A PERSONAL TRIBUTE George Dobbs G3RJV

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It was with great sadness that I heard the news of the death of Doug Demaw, W1FB. After fighting leukaemia for several months, Doug died on September 28th, aged 71.

I first got to know Doug through his writing in the early 1970's. At that time I was attempting to update my amateur radio technology from valves to solid state. My local library was generous enough to keep copies of the QST and in their pages I found a fellow traveller. Doug, then W1CER, had just become the Technical Editor of the ARRL. He was shifting the emphasis of their QST magazine from valve to solid state design. My early introduction to transistor circuit design and the first solid state projects I built came directly from his writing. It was lucid, it was interesting and I understood it.

Milton F."Doug" DeMaw was first licensed in 1950 as W8HHS. He was the son of a farmer in North Michigan. He spoke of his early days with a great fondness. The family grew their vegetables and frequently hunted their own meat. He began his working life as an engineer at the University of Michigan, then working with an aeronautical research company in San Diego. He also worked in radio and television engineering at WWTV and WATT radio in Cadillac, Michigan. He was chief engineer and part-time DJ for Radio WATT.

In 1960 he founded Avtronics in Traverse City, a company manufacturing low frequency radio beacons for civilian airports. He sold Avtronics in 1963, and began Comaire Electronics, manufacturing VHF and UHF amateur radio equipment. During his time running Avtronics, he established the VHFer magazine. This was taken over by Loren Parks, K7AAD, when Doug joined the ARRL staff in 1965.

He began his work on the ARRL Headquarters staff as an assistant Technical Editor. In 1968 he was promoted to Handbook Editor and Laboratory Superviser and in 1970 he succeeded the late George Grammer, W1DF, as Senior Technical Editor and Technical Department Manager. This marked the beginning of what I can only call the "golden years" of the QST magazine. Every issue seemed to be full of good technical articles and worthwhile projects to build.

During this time Doug deMaw produced and wrote several books for the ARRL. **Solid State Design for the Radio Amateur**, which he co-authored with Wes Hayward, W7ZOI, was the classic. I believe it to be probably the best technical book ever written on amateur radio. It was written exactly 20 years ago and I still use it constantly in my amateur radio construction. I understand that the co-authorship was not an easy road but it has entertained and informed me for all it's 20 years.

Doug served on the ARRL staff for over 18 years and is said to have written more than 200 technical articles in the QST. He earned several patents for his research work and practically invented the concept

of QRP construction. He had a great love for low power HF band amateur radio and his many articles were largely responsible for popularising QRP operation with home made equipment. Doug's wife, Jean, W1CKK, also worked on the staff of the ARRL and their son David is licensed as N8HLE.

Doug retired early, in 1983, on the death of his father, and returned to live in the family farm in Michigan. It was then I believe he did some of his best writing. The small series of what I call his "farm books", are outstanding. W1FB's QRP NOTEBOOK and W1FB's DESIGN NOTEBOOK are the ones that I re-read constantly.

It is not difficult to work out that W1FB was my hero. I have been inspired by his work for many years and he has kept the hobby alive for so many people. It is a lucky man who can come to know a hero as friend and I am glad to say that happened with Doug. When I began my writing for amateur radio magazines, Doug DeMaw was my model. The ARRL staff used to say of Doug, "he wrote it once and it was done!" In the 1980's I was more than pleased when he subscribed to SPRAT, and absolutely delighted when he began to write to me about SPRAT and even about the articles I wrote for UK radio magazines.

We exchanged mail for several years and I first visited Doug at the end of a trip to the Dayton Hamvention in 1992. Dick Pascoe, G0BPS, and I did the day's drive from central Ohio to northern Michigan to visit the Oak Hills Farm. It was a visit to a deity! The farmhouse lies just outside the tiny village of Luther among the lakes and forests of north Michigan. The house is beautifully restored and much of the surrounding land has been left to return to the wild. Here Doug followed his other great loves, black powder shooting, hunting and cooking with natural ingredients. We were served wild deer and onions gathered from the local forest. Jean DeMaw was a lovely hostess as well as being a keen shot with a muzzled loaded rifle.

On my next visit to the Oak Hills Farm, I was presented with a wooden plaque which had my callsign burned on a deer jawbone. It had the inscription, "Primitive Man Endorsement. In recognition of the accomplishments of Rev. George Dobbs, G3RJV, who has demonstrated at Luther, Michigan, his skill and deadly marksmanship with primitive muzzle-loading weapons, for having eaten wild deer meat and for quaffing native grog at the Luther tavern. Rev. Dobbs has earned the title of Mountain Man and Buckskinner. By the hand of Doug DeMaw, W1FB, 1994." I also cherish a small cup fashioned from deer horn by Doug and presented to me on condition that it would only ever contain spirits.

In 1992, the American QRP ARCI, revived the QRP Hall of Fame Award and Doug was the first named recipient. I was also chosen to receive the award at the same time as Doug. My own amateur radio writing is modelled on Doug's style and I have always tried to make it as interesting and worthwhile as his work. Doug was presented with his plaque first and after I received mine I joined him, I looked up to him and said, "I don't know why they gave me one of these?" He looked down from his height and in the deep voice, that always reminded me of James Stewart, said, "I reckon for about the same reason they gave me one." Without doubt, the nicest thing anyone has ever said to me!

The last contact I had with Doug DeMaw was about 10 days before his death. He sent me an email. It was a joke about a nun. Nothing else. An era in amateur radio has ended !

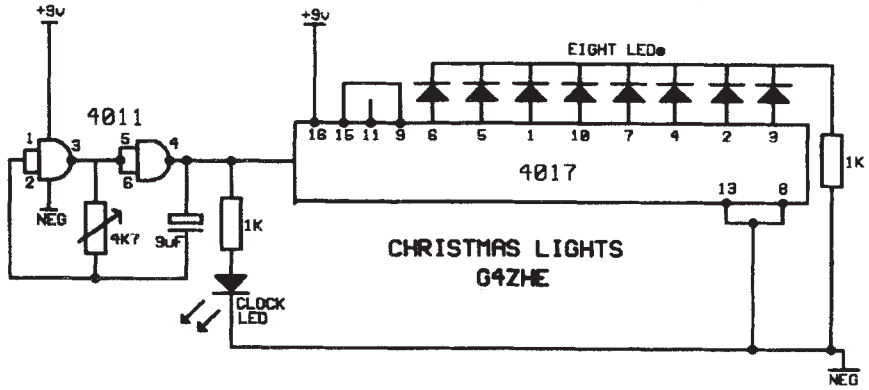
US MEMBERS Please Note

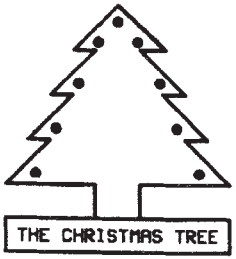
Your renewal of subscription are now to be sent to **Bill Kelsey, N8ET**, see centre pages. Bill is also on email via **kanga@bright.net**
The club extends its thanks to Mike Kilgore, KG5F, for all his work for the club over the last few years.

A Christmas Project (for Next Year ?)

Albert Heynes, G4ZHE, 20 Walsingham Rd. Penketh, Warrington. WA5 2AQ

If you are operating in the G QRP Club Winter Sports and your family begin to criticize you for not watching old television films with them. restore some good will with a project for them.
This project came from some work with 6th form students on a Craft Technology and Design course. Some students wanted flashing LEDs to decorate some of their projects. To demonstrate the circuit. I built one in the form of a flashing Christmas Tree. My tree uses nine LEDs. with the clock LED. which flashes 8 times faster than the others, on the top.





The circuit uses half of a 4011 quad input nand gate as a clock and a 4017 divide by 10 with 1 of 10 outputs. The clock pulse sequences the LEDs one at a time. The 4017 can supply up to 10 outputs (wire pin 15 to reset neg. rail for 10 outputs) or if less LEDs are required then the output pin after the last LED in the sequence is wired to pin 15 (reset pin) and all goes round again... etc.
I normally add an LED in the clock circuit so that students know what parts of the circuit are working.

My Christmas Tree is 4 inches high and 4 inches wide and made of PCB material, painted to look like a tree. It has a wooden base about 3 inches square. All the electronics are on a veroboard fitted to the back of the base. Build this and win favour with the family!

PLEASE NOTE: Adur Village Press – The address given on the back page of the Member's Handbook was the OLD address. The new one is as in this SPRAT.

ROCK'S EASY 3 and PARTS FOR IT [SPRAT 91]

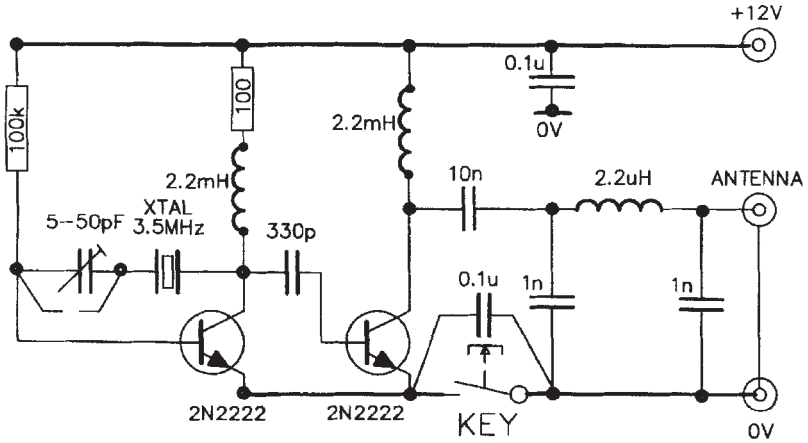
Some readers have asked "where do I get a valve interstage transformer?" "where do I get 2K headphones?" The answer is one place.

ISOPLETHICS, 13 Greenway Close, North Walsham, Norfolk, NR28 0DE

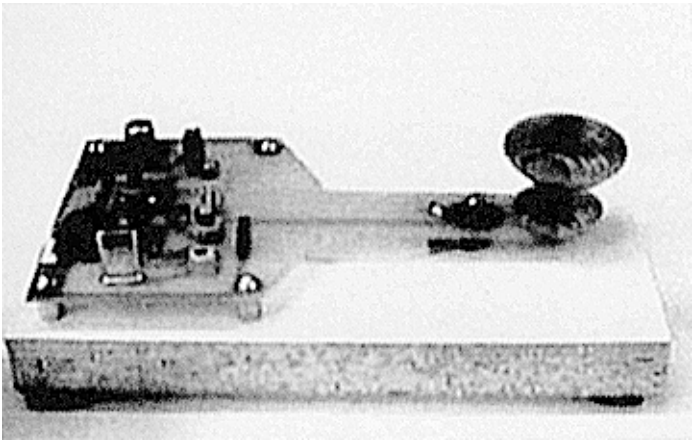
Sell their own "intervalve coupling transformers" and an adapter to convert 32Ω stereo phones to 8KΩ and adjusts the frequency response to sound like high impedance metal diaphragm headphones. Please send an SAE or stamp and address sticker for their list.

The Transmitter Key

Johnnie Apell SM7UCZ, Ekedalsvagen 11, Jamjo, S-373 00, Sweden



THE BUDGET 80 MTR QRP–TRX 0.5W



THE SM7UCZ TRANSMITTER KEY

The Whole Transmitter is built on the printed circuit board which also acts as the key.

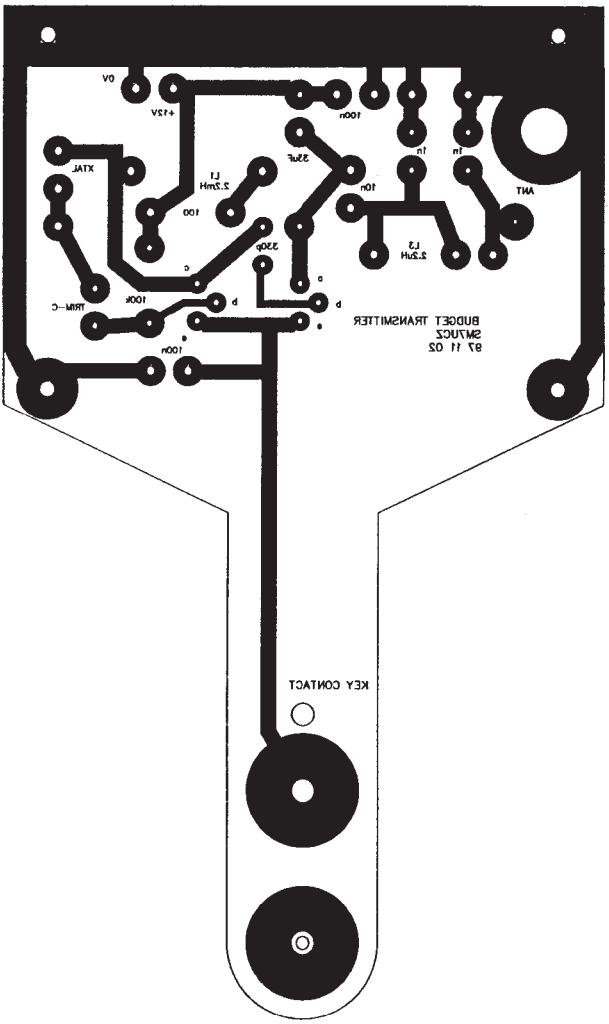
The small 40m transmitter only puts out about half a watt. But a lot of good stuff has been worked on 40m with only half a watt!

The TRANSMITTER KEY is available in kit form from KANGA PRODUCTS (see the address on the back page) for £9.95 + £1.50 postage
You will have to provide the wooden base and the knob !

I was interested in the "Speed-Brush" which was a Morse practice oscillator built on a printed circuit board which formed the actual Morse key (PRACTICAL WIRELESS – May 1991).
I have put a small transmitter on the back of a printed circuit board Morse key. Others might like to add a complete transceiver. I am also working on a valve version of this idea !

BELOW – THE LAYOUT OF THE TRANSMITTER KEY

80mm



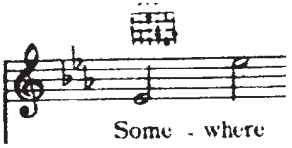
The Maidenhead PIXIE

Peter Howard G4UMB, 188 Dashwood Ave. High Wycombe, HP12 3DD

This is a version of the PIXIE transceiver built in sections on versoboard by members of the Maidenhead Radio Club as a club project.

It has the following advantages:

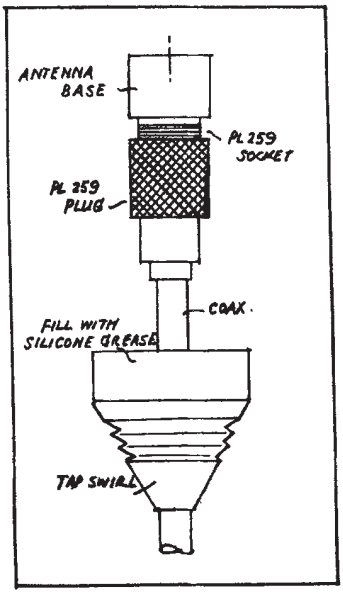
- **Runs more power – up to 800mW**
- **Has no oscillator running between keying, which was annoying for local working.**
- **Good offset of about an octave. Set up with another receiver by adjusting to the trimmer capacitor to the first two notes of "Somewhere Over a Rainbow" !**
- **It includes a sidetone**



The six-pole switch is a push latching switch sold by Maplins. Only a single switch is required not a full bank.

Weatherproofing PL259 Connections

Alan Gray G4UEV, 59 Little Mead, Hatfield, Herts, AL10 0UQ



When I made my 25 ft vertical antenna,
I needed to protect the PL259 plus and socket for the weather.

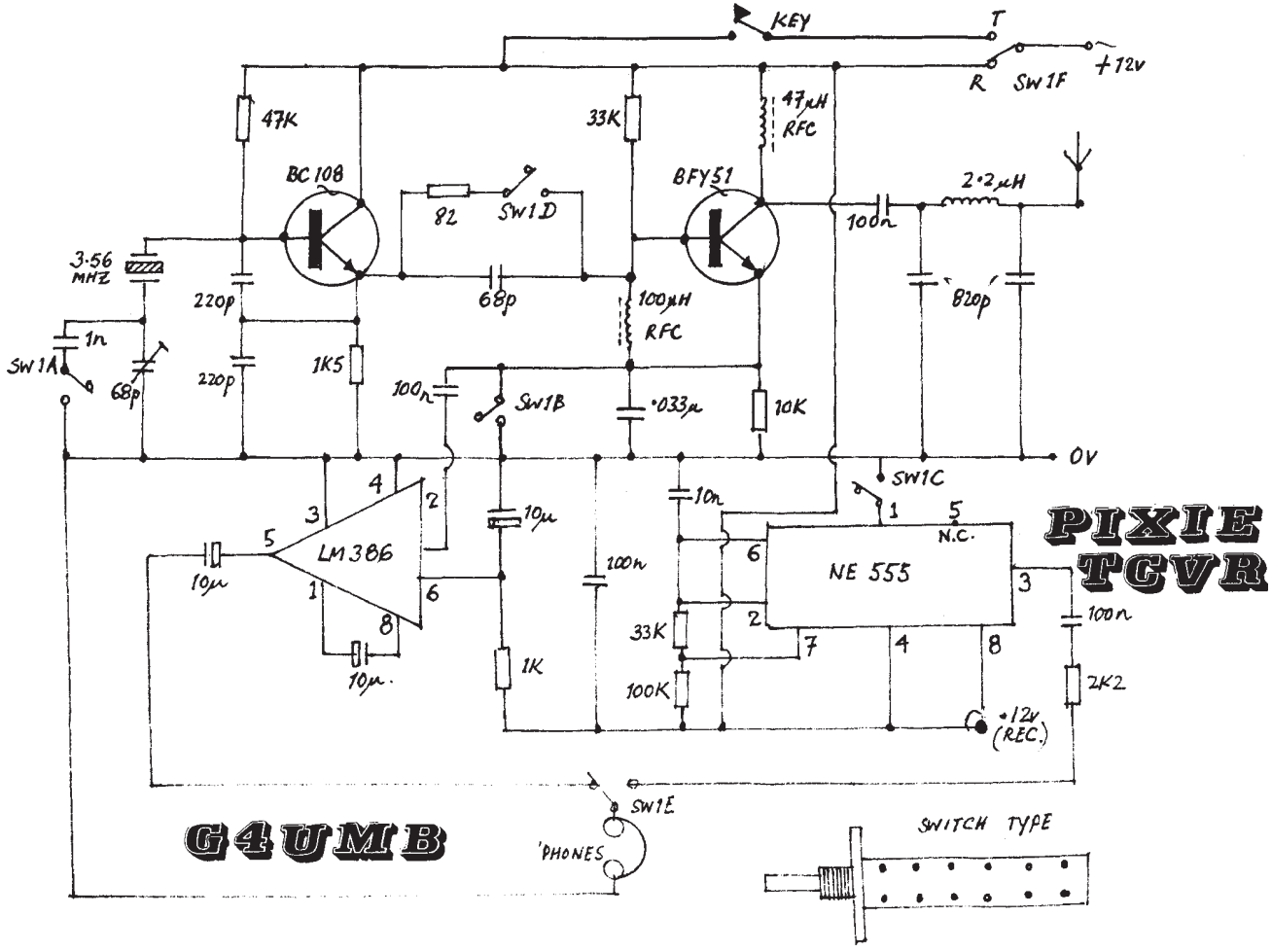
Being a hoarder of all sorts that will come in useful later,
I found a discarded small rubber tap swirl in the junk box.
I tried it over the PL259 and found it was a tight fit.

It has been out in the weather for some four years now
and the PL259 plug is as good as new with no water ingrees .

German GQRP Club Members
MEETING IN MAY 1998

Please contact Rudi before the end of January

Rudi Dell, DK4UH, Weinbietstr. 10, 67459, BOEHL-IGGELHEIM


KEY
T
R
SW1F
+12v
47K
33K
47µH RFC
BC108
BFY51
82
SW1D
2·2µH
100n
3·56 MHZ
220p
68p
100µH RFC
820p
1n
SW1A
68p
220p
1K5
100n
SW1B
·033µ
10K
0V
SW1C
LM386
10µ
10µ
10µ
100n
10n
NE 555
N.C.
33K
100K
1K
100n
2K2
+12v (REC.)
SW1E
'PHONES
G4UMB
SWITCH TYPE
PIXIE TCVR

A Balanced Direct Conversion Receiver for 80/40/20

Bill Currie, VK3AWC, PO Box 5197, Mordialloc, Victoria 3195, Australia

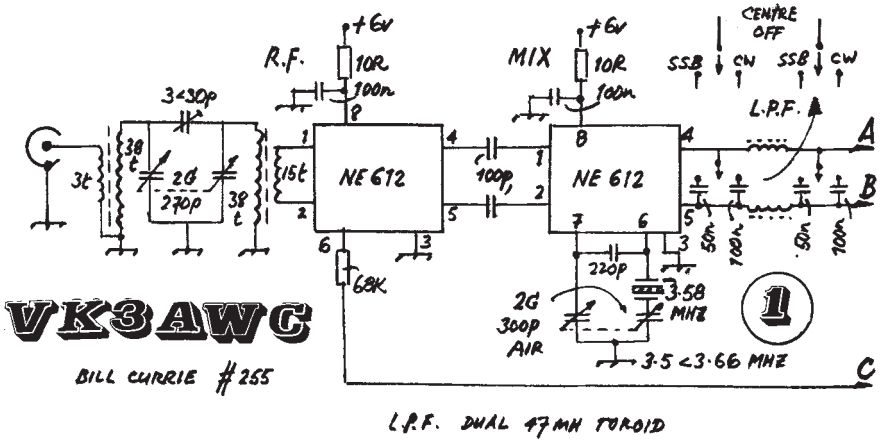
THIS ARTICLE WAS FORWARDED BY THE VU QRP CLUB - BILL IS G QRP CLUB MEMBER 8102

I recently came across an old 'Wireless World' that I had bought for 50 cents at a swap meet about 10 years ago. This magazine had an article on a Direct Conversion Receiver that used push-pull coupling throughout. The author quoted that this receiver was free from the tuneable hum problems that usually plague other designs. The circuit used discrete transistors and being push-pull used twice as many as normal designs. As most modern IC's have lots of transistors in an inherently balanced configuration I decided to make a 'state of the art' version of the old Wireless World circuit.

The final design uses four stages, all of which are balanced. I decided on the NE612 I/C for the first three stages as these chips can be used as mixers or amplifiers from DC to many megahertz. The NE612 is a cheaper version of the NE602 and just as good at these frequencies. They work off six volts, have balanced input and output and the gain can be controlled easily. The output stage uses a TDA282M dual audio power amp, which works fine off six volts and is less 'hissy' than the LM386. The stages are as follows:

1. RF amp. NE612 double tuned input. Gain controlled.
2. Mixer/Osc. NE612 using ceramic resonator oscillator.
3. AF am.. NE612 L/C low pass filter input. Gain controlled.
4. Output. TDA282M in bridge circuit, or LM386 if you really want to!

The RF stage uses two tuned circuits, bottom coupled and tuned by a dual 270pF plastic tuning capacitor. With care, this can be made to cover 80, 40 and 20 metres. This is a bit of a compromise and separate switched coils would give better performance. Gain can be controlled by varying the bias on pin 6 of the NE612 (RF gain control). The mixer is capacitively coupled to the RF stage. The oscillator uses a 3.58 ceramic resonator to tune from 3.500 to 3.600 MHz. It is preferable to use an air spaced 2 gang here but I used a surplus 270 x 270 pF plastic unit and banked the change. Even though the osc is on 3.5 MHz the mixer will respond to 7 MHz signals. But wait, there's more! The receiver will ALSO pick up 14 MHz signals! Coverage on 7 MHz is 200 kHz and on 14 is 400 kHz. If you want full 80 metre coverage a separate L/C VFO (band switched?) could be considered.

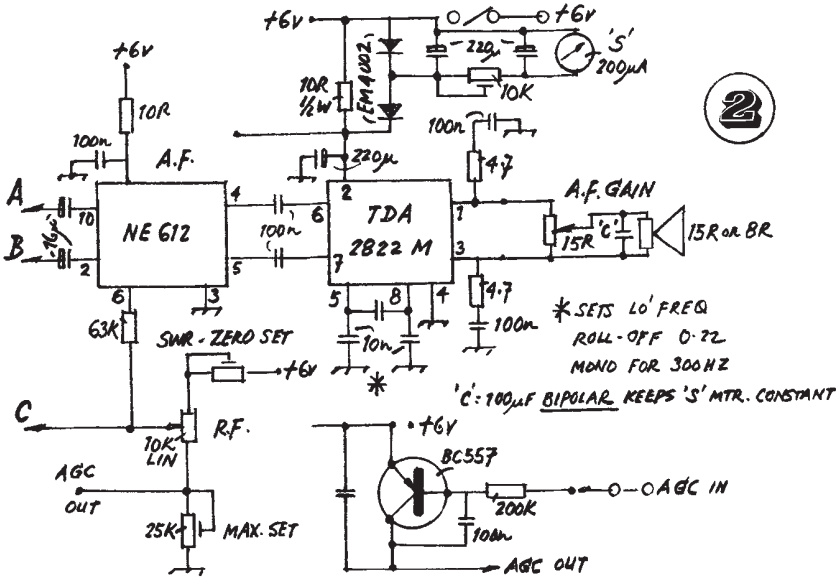


L.P.F. DUAL 47MH TOROID

The audio amp is coupled to the mixer via a low pass audio filter. This uses a dual 47mH toroidal AC line filter and a couple of capacitors. The toroid could possibly be replaced with a couple of chokes or resistors if you are prepared to experiment. The gain of the NE612 is controlled by altering the osc base bias (AF gain control).

The output stage uses a TDA2822M dual audio amp in a bridge configuration. The low frequency roll-off is determined by the capacitor between pins 6 & 7. An LM386 can be used here with slight difference in performance.

I later added an 'S' meter and AGC to the original set which is shown in a separate circuit. The 'S' meter circuit can be mounted on the Op board but a separate board is used for the AGC circuitry. If an LM3286 is used for the output, you may need to increase the 10 ohm decoupling resistor to obtain enough 'S' meter/AGC voltage.



STOP PRESS NEWS ON THE YEOVIL CONVENTION

The Lectures at the !4th Yeovil QRP Convention on April 19th 1998 are

Rob Micklewright – G3MYM – Aerials and Earth
Derek Weber – G3LHJ – Contest Working with QRP Equipment
George Dobbs – G3RJV – Options for a QRP Homebuilt Station

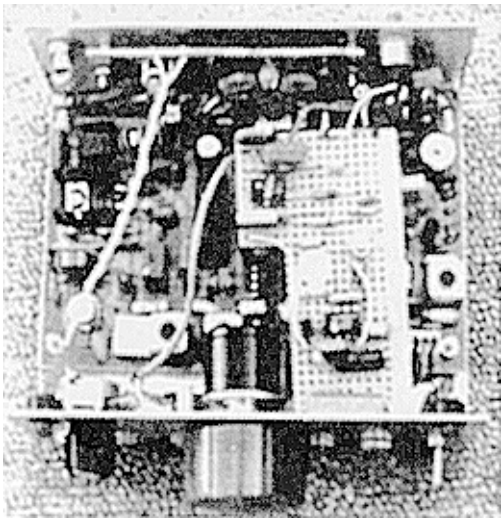
N.B.T.V.A.

The Narrow Bandwidth TV Association (founded 1975) is dedicated to low definition and mechanical forms of ATV and introduces radio amateurs to TV at an inexpensive level based on home-brew construction. NBTV should not be confused with SSTV which produces still pictures at a much higher definition. As TV base bandwidth is only about 7kHz, recording of signals on audiocassette is easily achieved. A quarterly 12-page newsletter is produced and an annual exhibition is held in April/May in the East Midlands.

If you would like to join, send a crossed cheque/postal order for £4 (or £3 plus a recent SPRAT wrapper) to Dave Gentle, G4RVL, 1 Sunny Hill, Milford, Derbys, DE56 0QR, payable to "NBTVA".

Adding CW to the Epiphyte

Graham F Firth G3MFJ, 13 Wynmore Dr. Bramhope, Leeds. LS16 9DQ
Graham.Firth@BTInternet.Com



Last year George Dobbs G3RJV asked for volunteers to build sample Epiphyte 80m SSB Transceivers to send with the kits under the Norcal/G-QRP scheme for the third world. Tony (G4WIF) and I offered our services and were accepted.

I built the kit & was impressed with the rig - 5 watts pep and it tuned all the UK band 3.6 to 3.8MHz. Derry VE7QK had done a great design job. I then thought back to Dayton last year where I had bought all sorts of things (as you do there!) and remembered that one of the things I had bought was an Epiphyte PCB from FAR. So out it came & I built my second but this time - I had to get all the parts myself - well I got two lots, as Tony had bought a board as well

Last December, Tony & I decided to have a joint boating holiday with our families on the Norfolk Broads. We decided to take a rig so we decided we'd take the Epiphyte but it was a shame it was SSB only. This got me thinking.

Firstly, it needed conversion to cover the CW end of the band as well as the SSB section. This was easy as the varicap I had used was a double one as I couldn't find the correct one as specified by Derry. I found that by paralleling the two halves (no doubt someone will say you can't do that!) it worked fine - it covered 3.498 to 3.801 - exactly what I wanted.

The next part was to generate to CW. I thought first about re-injecting the carrier after the NE602, but that looked complicated. Then I remembered the TiCK chip invented by those two "Sons of the Dessert" Gary and Brad of Embedded Research. This had an audio output and if I could use that, I wouldn't need IRT because if I tuned my receiver to be the same note as the audio out of the chip, I would be zero beat with the other station. All I needed was to turn the 3+ Volt square wave into a microphone level sine wave. That I did with a single op-amp - a 741 connected as a simple low pass filter.

The circuit is easy. I made all up on a piece of Veroboard (strip board?) which took the TiCK and the LP filter. I used an off-cut which is why it is the shape it is! The modifications to the Epiphyte were a DPCO switch which switched the audio input to the modulator between the microphone and the LPF output, I also switched the power to the LPF as the keying could be heard on receive if the paddles were touched.

GQRP CLUB DIY QSL CARDS

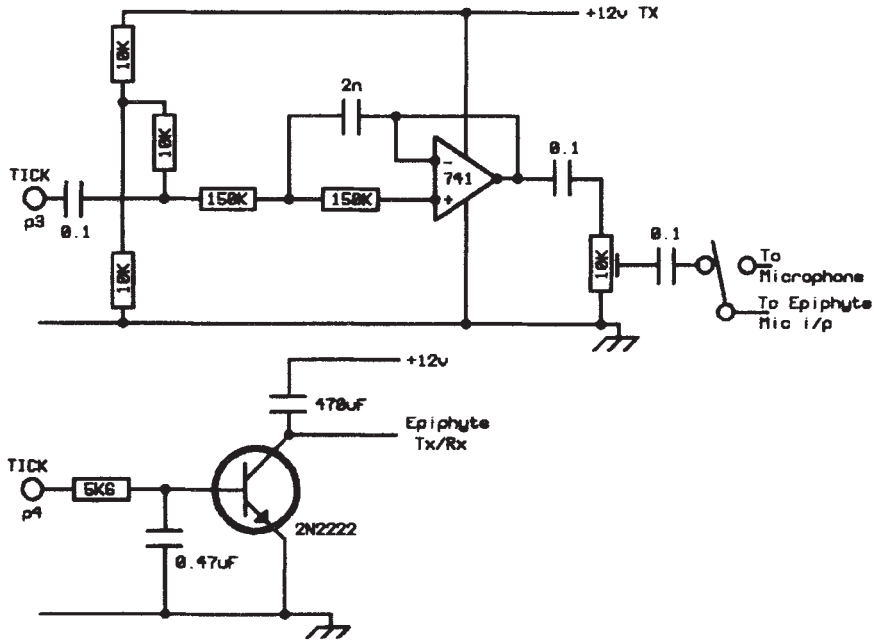
Please note that when the present small stocks are exhausted, G3YCC will not be able to supply any more. So, buy now if you need any cards! The costs is 2.50 for 100 cards including UK postage. Cheques payable to GQRP Club to Frank Lee, G3YCC, 8 Westland Road, Kirk Ella, Hull HU10 7PJ

I used the TiCK circuit as recommended by Gary & Brad except that I added a large capacitor in parallel with the Tx/Rx relay to give semi break in as the Epiphyte clipped the cw a bit with full QSK. This was mounted next to the keying transistor on my PCB.

The only thing I did wrong initially was to power the TiCK down on phone. The TiCK I used was the one with a memory & it lost it's configuration if I switched to phone. I've since modified it to be powered all the time as it takes negligible current on standby.
The only adjustment needed is to adjust the output pot until the PA draws about 500/600 mA on key down.

That's it! Tony made a linear loaded dipole as described by W4RNL at FDIM this year and we worked around the UK on both phone and CW (when the family holiday permitted)!

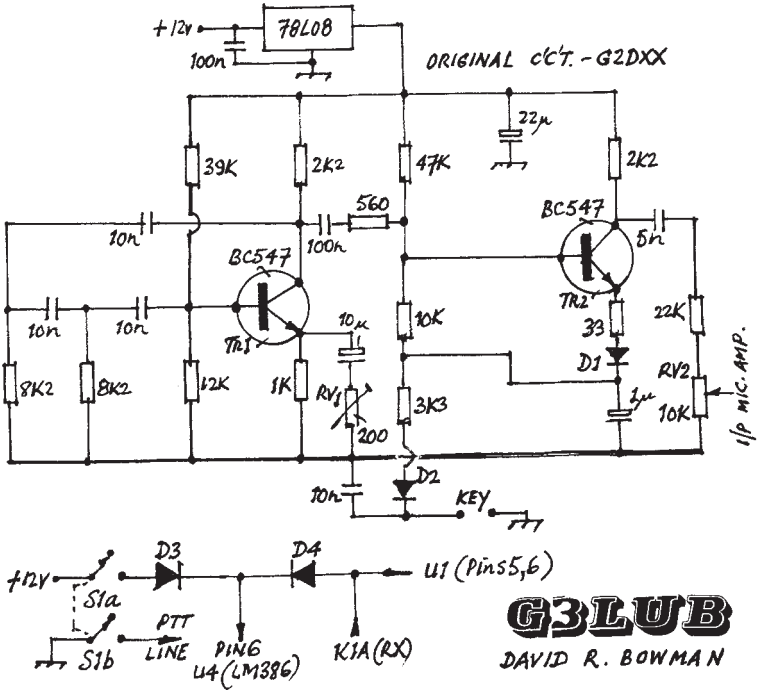
The picture shows the Epiphyte board mounted in a Ten Tec case with the cw mod board mounted higher. The filter on the circuit diagram is a better one than the one shown in the photo - so it's a bit different.

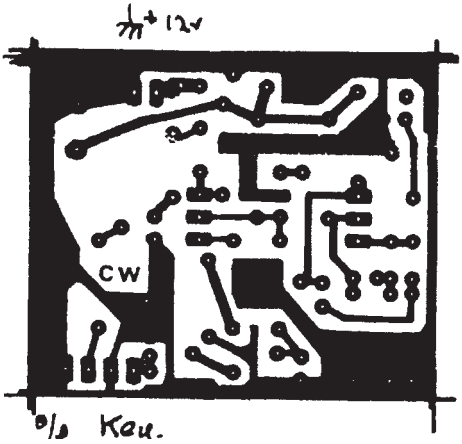


HELP WANTED: Tom Frankland, G4INM, would like to add WARC bands to an HW9. Can any club members help Tom with this conversion? Tom Frankland G4INM, 131 Rutland Road, Chelmsford. Essex, CM1 4BN.

A CW Generator and Sidetone for the Epiphyte 2

David Bowman G3LUB, Blea Rigg, Little Lane, Loosley Row, Princes Risborough, Buckinghamshire. HP27 0NX





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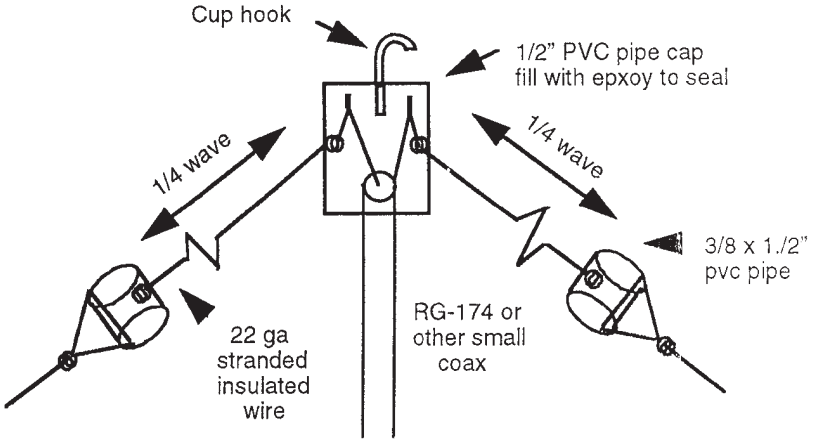
p/p to

This is a simple way to put an EP-2 transceiver onto CW. A phase shift oscillator provides a tone which is fed into the microphone input of EP-2. C1 sets rise and fall dealy (approx 5m/sec), RV1 is set for best sine wave with reliable starting. RV2 set the required output. Note that both oscillator drive levels on the author's EP-2 were reduced to about 500mV to the NE602, by changing C5 to 2.7pF and C6 5.6pF.

PVC GUSHER ANTENNA MOUNT : For Dipoles

Joe Everhart, N2CX, 214 N.J. Road, Brooklawn, NJ. 08030. U.S.A.

A lightweight inexpensive inverted vee dipole for portable operation, adapted from the BIC Flame-thrower from Fred Turpin, K6MDJ. Radiator wires are attached to insulators by passing them through clearance holes and knotting. Coax passes through clearance hole drilled in end of pipe cap and soldered to dipole wires. Seal around coax with model aeroplane cement then fill cap with epoxy. Cup hook screws into epoxy to hang the antenna.

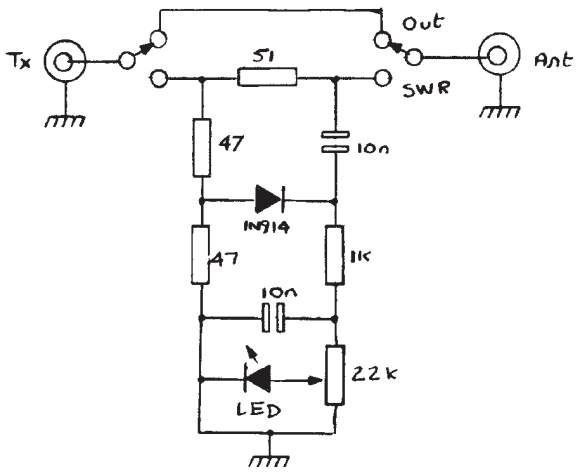


SIMPLE LED SWR BRIDGE

John Young G0WQR, 19 Wycombe Rd. Princes Risborough. Bucks HP17 0EE

Inspired by G4TKV's comments about Superbright LEDs, see RadCom (TT May 1997), I modified the popular QRP SWR Bridge by replacing the micrometer with a superbright LED. Unlike ordinary LEDs, the Superbright will glow with a current of less than 10 micro-amps.

With less than 1 watt output from the TX, the LED is fully illuminated and extinguishes as the load is matched for minimum VSWR. Easy to use and it takes up little panel space – ideal for that miniature QRP rig.

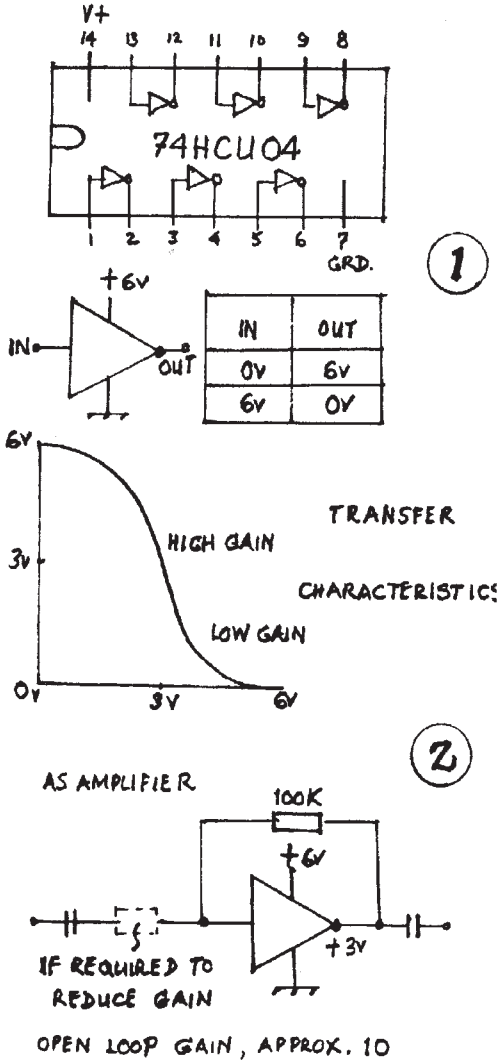


The 74HCU04 – A Miser's Dream

Bill Currie, VK3AWC, PO Box 5197, Mordialloc 3195, Australia

Reproduced from Lo-Key, the CW Operators' QRP Club Journal, September 1996

Ever since I discovered that the 74HCU04 could be used as a linear amplifier, I have been using the little blighters for all sorts of things. The more I play around with them the more I am convinced that they can be used as a sort of "universal" amplifier from DC to RF to replace bipolar and FET transistors and even op-amps. The fact they cost very little is worth thinking about; especially of you are a "careful" person like myself!



The 74HCU04 is a High-Speed CMOS Unbuffered Hex Inverter chip intended for digital use. It comes in a 14-pin DIL package and will work on any voltage between 2 and 6 volts.

Each inverter consists of an N channel and a P channel Mosfet connected in a totem pole configuration. The inverters will sink or source 4mA and have protection diodes fitted to the input and output pins. If a resistor is connected from input to output the inverter will bias itself into the linear mode. The input and output pins will settle to a DC voltage of approximately half the rail voltage.

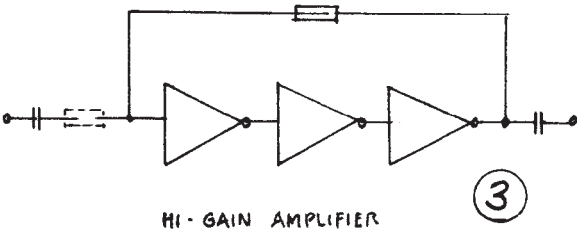
The inverter will now operate as an amplifier, the gain depending on the value of the feedback resistor and the input resistor (if fitted).

The configuration is similar to an op-amp with an inverting input only. As the open loop gain is only 10, there is seldom need to fit an input resistor.

The input impedance is high and depends upon the resistor[s] fitted. The output impedance is fairly low and is probably less than 1000 ohms. One disadvantage of the device is that each inverter draws about 15mA when in linear mode (5 volt supply).

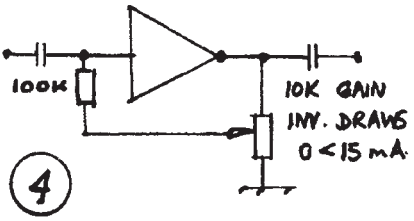
As well as being used in the digital mode, the inverters can be used as DC, audio and RF amplifiers up to about 50MHz. They also make fine AF and RF oscillators and can be used for VFOs and buffers.
One problem here could be noise. As the only test equipment here is a 6 volt pea lamp with test leads (!), I would appreciate results from anyone doing tests in this respect.

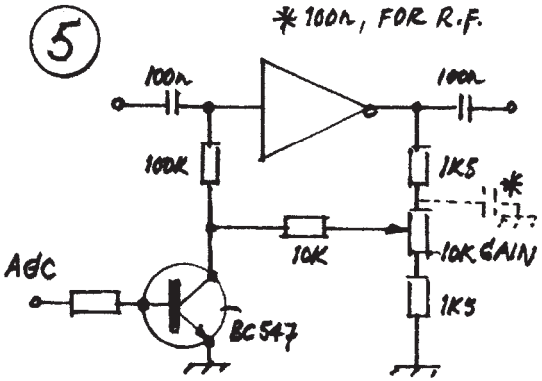
When using the 74HCU04, as with all CMOS chips, it is essential that ALL UNUSED INPUTS BE CONNECTED TO GROUND OR TO A POSITIVE RAIL. The inverters will draw virtually no current in this mode.



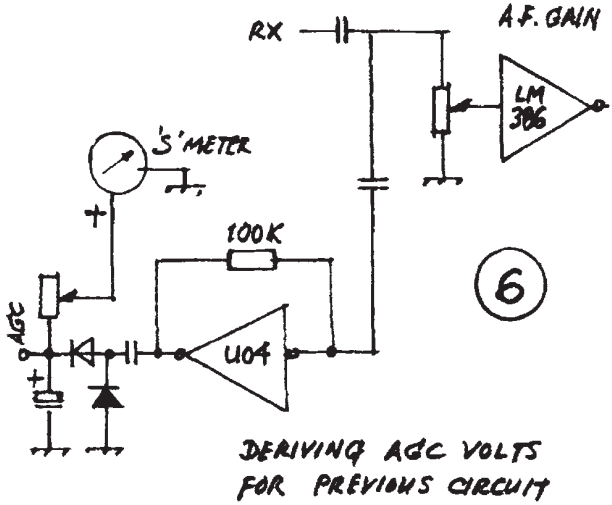
To obtain more gain from the chip, it is possible to directly connect 3 (or 5) of the inverters in a series amplifier circuit. To increase the output drive you can connect 2 or more inverters in parallel. It is possible to control the gain of a single stage by connecting a pot between the output pin and ground.

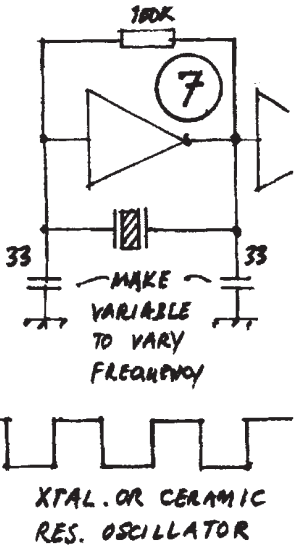
A high value resistor is then connected from the slider of the pot to the input pin. The gain can be varied from zero to about 10. With a 5 volt supply, the current drawn will vary from zero to about 15mA.





This circuit lends itself to automatic gain control for low level RF and audio stages. You may need to think about heatsinks if using 3 or more inverters in the linear mode as they get a bit hot. It pays not to use more than about four of the inverters on one chip at the same frequency, as they tend to become unstable.





Due to some of the "rats nests" that have evolved,
I have changed my thinking on the use of these chips.
I now use a separate chip for each section of the circuit.
This makes for better layout and easier wiring.
The surplus inverters can be biased off
and if this redundancy worries you –
remember they are cheap!

A few typical circuits are given here.

There are probably many more uses for this chip.
If you are looking for a versatile, easily tamed,
low gain device, good to 50MHz –
try the 74HCU04.

SUBSCRIPTIONS 1998 - FROM THE MEMBERSHIP SECRETARY

John Leak G0BXO. Flat 7, 56 Heath Crescent. HALIFAX, West Yorkshire. HXI 2PW.
Tel: 01422-365025.

Subscriptions for 1998 are now due. Please see the centre pages of this issue of SPRAT for details of rates and methods of payment.

A number of members who pay their subscriptions by standing order have STILL not amended their standing order to the present subscription rate of **£6** which was introduced in 1995.

If you are one of the members concerned, **PLEASE amend your order for 1998**. A form for this purpose is included in this issue of SPRAT.

If you are a UK member and do not pay by standing order, please consider doing so in the future.

This method of payment is the cheapest and easiest for us to process.

EXTRA AUDIO GAIN FOR THE LCK

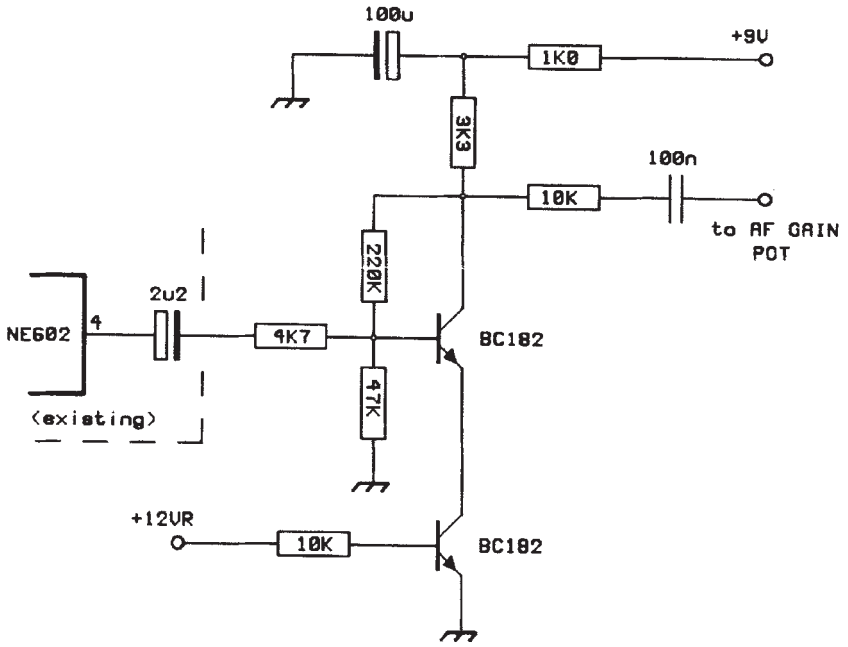
Richard Hanes G0RPH, 22 Lady Frances Dr. Market Rasen. Lincolnshire, LN8 3JJ

The LCK is an excellent little rig and I now use two of these on 80 and 40 metres. When I first completed these however, I noted two aspects that I felt needed improvement on both rigs. The receiver AF gain appeared to be lower than I was comfortable with and the muting during transmit did not function well, resulting in a most unpleasant sidetone due to overdriving of the audio stages.

This circuit was added to both LCKs as a piggy-back board and cured both faults.

The circuit functions as simple common emitter amplifier with the emitter grounded through the switch transistor only during receive. The gain of the circuit is about 10x which is more than adequate. During transmit the transistors are off and the sidetone is passed to the volume control through the bias resistors, resulting in a loss factor of about 200, still adequate feedthrough to give comfortable listening.

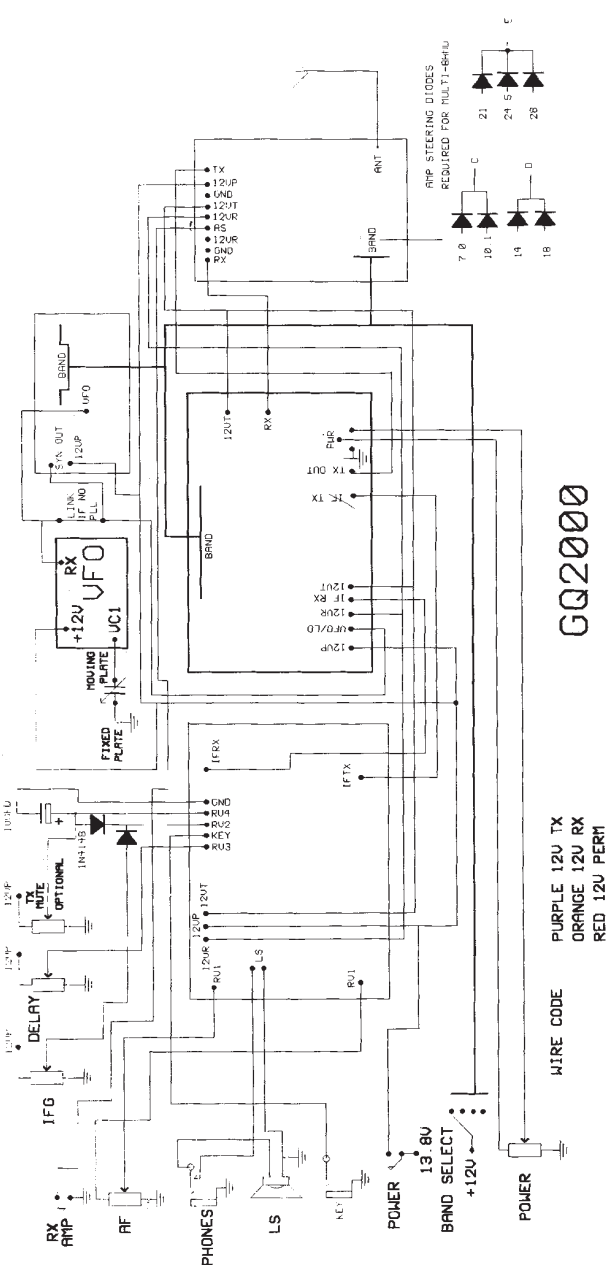
The circuit is connected between the CIO mixer NE602 and the volume control with power being drawn from the 9v rail. Transistor types are not critical – 2N4401 being used in my boards, but BC108 or BC182 would be equally suitable. The original muting transistor was removed. The +12VR signal can conveniently be obtained at the spare contact on the relay (it must be switched voltage!)



LCK MODIFICATION G0RPH/6967

The GQ2000 CW Transceiver - Part 4 LO/Wire up

Sheldon Hands, GW8ELR, Tegryn, Llanfyrnach, Pembs. SA35 0BL



Local Oscillator

The Local Oscillator requirement for the mixer will depend on how many bands are used. For the starter kit a simple 5-6MHz VFO will give injection for output on both 80/20. This is not ideal as the bottom of each band appears at the extremes of the VFO coverage. A better arrangement is to use the G3YCC relay switched VFO [Sprat 75] which would also give output on 1.96-2.00MHz for 40m Beyond 3 bands requires a pre-mix system. Most constructors so far have opted for the G3ROO synth [Sprat 70/ ARRL H/B] or the Hands PLL10. The club has xtal stocks to suit all current HF bands for this set up .The PLL is the best way to go for novice constructors as the set-up can be done with just a GC RX or counter and a multimeter. If you have the G4OPE DDS [Sprat 89] this makes the ideal reference VFO.

Inter connections

The module wire up diagram should be self explanatory. The board signal path connections should use miniature 50R coax. Some of the prototypes used single core mic cable for the low level stages, and no adverse effects were noticed.

Variations

The mixer and amplifier may be-run with the ANV-IF [Sprat80] for a SSB/CW QRP transceiver. The mixer board will also drive the RTX- or Cirkit AMP to 20 watts for QRO merchants.

Hands Electronics can supply a 80/20 metre 5 watt starter kit for club members at £180

PLEASE NOTE THE DIAGRAM WILL REPRODUCE WITH SMALL TEXT ON THIS PAGE. IT CAN BE MADE CLEARER BY USE OF A COPIER AT TWICE SIZE

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Your SPRAT label tells you your current status. Your receipt is the updating of your status code on your SPRAT address label. We do not send receipts unless we receive a stamped self-addressed envelope with your payment. The labels for your SPRAT are printed 4/5 weeks ahead of publication so there may be a time lag before your code is updated

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Please do not make cheques payable to individual club members

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NWB1320 Rev Feb 85-1

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Fuer Mitglieder in Deutschland: Der Clubbeitrag ist DM 18,--
Ueberweisungen bitte bis spaetestens 31. Januar unter Angabe Ihres Rufzeichens und Ihrer G-QRP-Nr. auf das Clubkonto
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Bitte keine Schecks und kein Bargeld senden!
Fuer weitre Infos und Aenderungen z.B. der Anschrift oder des Rufzeichens zuständig: Rudi Dell, DK4UH,
G-QRP-Nr. 2901, Tel 06324/64116

Rudi Dell, DK4UH,
Weinietstr. 10
67459 Bohl-Iggelheim
Germany

THE NETHERLANDS

Ondanks de sterke koers-schommelingen is het hebben wij de contributie op Hfl 21.50 kunnen houden. Om mij een hoop extra werk besparen vraag ik jullie om VOOR 30 januari 1998 de contributie over te maken op Postgiro 2730858 tnv Halpin, Hengelo. Vergeet vooral niet om zowel je cali als je lidmaatschapsnummer te vermelden. Zonder deze informatie is het helaas niet mogelijk de betaling in behandeling te nemen, en zal het overgemaakte geld worden teruggestort. Voor vragen of info bel mij op 074- 2771832, of stuur email naar petehalp@xs4all.nl of als het echt niet anders kan PE1MHO@PI8DAZ.#TWE.NLD.EU 145, Pete

BELGIUM

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N'oubliez pas d'indiquer votre indicatif et votre numéro de membre!
Contributie/cotisation: Bef 350.00, - voor/avant le: 31 Jan 97 op nummer/ au numéro: 250-0062335-49.

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Fonds des Vaulx 69a
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Belgium

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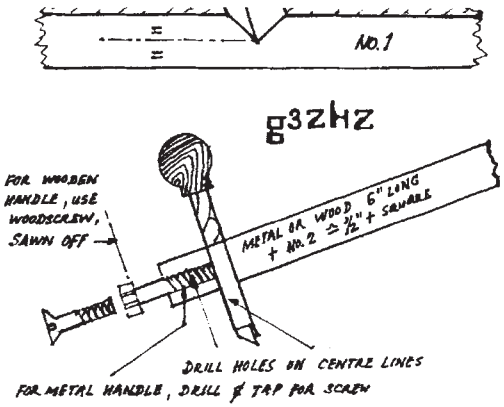
MAKE - A - BOX

John Shaw, G3ZKZ, The Shieling, 13 Mill Lane, Barrow, Bury St. Edmunds. IP29 5BS

I am quite sure that at some time we have all had a go at making a box for our latest project. If this has involved bending aluminium and no professional equipment is available if often ends up with a definite second-hand appearance. To help with this I would like to describe an ancient method of bending metal that will give you a really sharp, straight bend, exactly where you want it every time, and you bend it with your hands! This is achieved with a method called "scoring".



A 90° + V groove is cut through 50% of the material thickness on the inside of the bend, then you just pick it up and bend it Cutting the groove is quite straight forward but first you will need a scoring tool. Once you have read this article I am sure you will have ideas of your own for making one, but I will suggest a couple of ways to get you started. You will need to make a 'grooving tool' and 'handle'. Hopefully this is self-explanatory for the handle, but remember to work the wood screw in the hole a few times before sawing the end off.

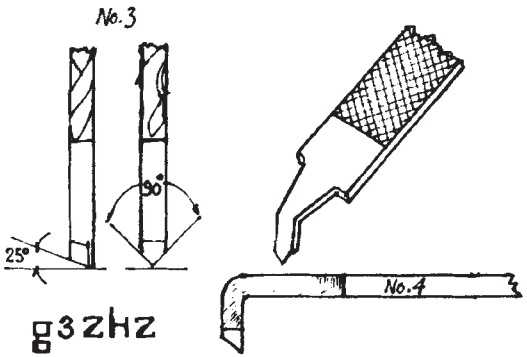
Method No.1

The scoring tool can be made from 4/6mm dia. Oil hardening cast steel (Silversteel), alternatively, from a cheap DIY drill - the type that bends when you use them as these have soft ends. File the shape in diagram on the blunt end of the drill, heat with your butane blowlamp to a dull red, and plunge into water. Be careful not to play the flame on the sharp edges.

Method No.2

File the shape in the diagram on the tag end of an old file, heat and bend, re-heat to a dull red and plunge into water.

Now all you have to do is to clamp a straight piece of metal or wood parallel to your fold line and start cutting the groove, light strokes at first, pulling the tool towards you from the centre to one edge then the centre to the other edge. When you are half way through pick up the aluminium and bend it. NOTE: THE SCORED LINE MUST BE ON THE INSIDE OF THE BEND



You will be pleasantly surprised how easy it is and once you have made your tool, it also makes cross-hatching P.C. boards for ugly construction child's play.

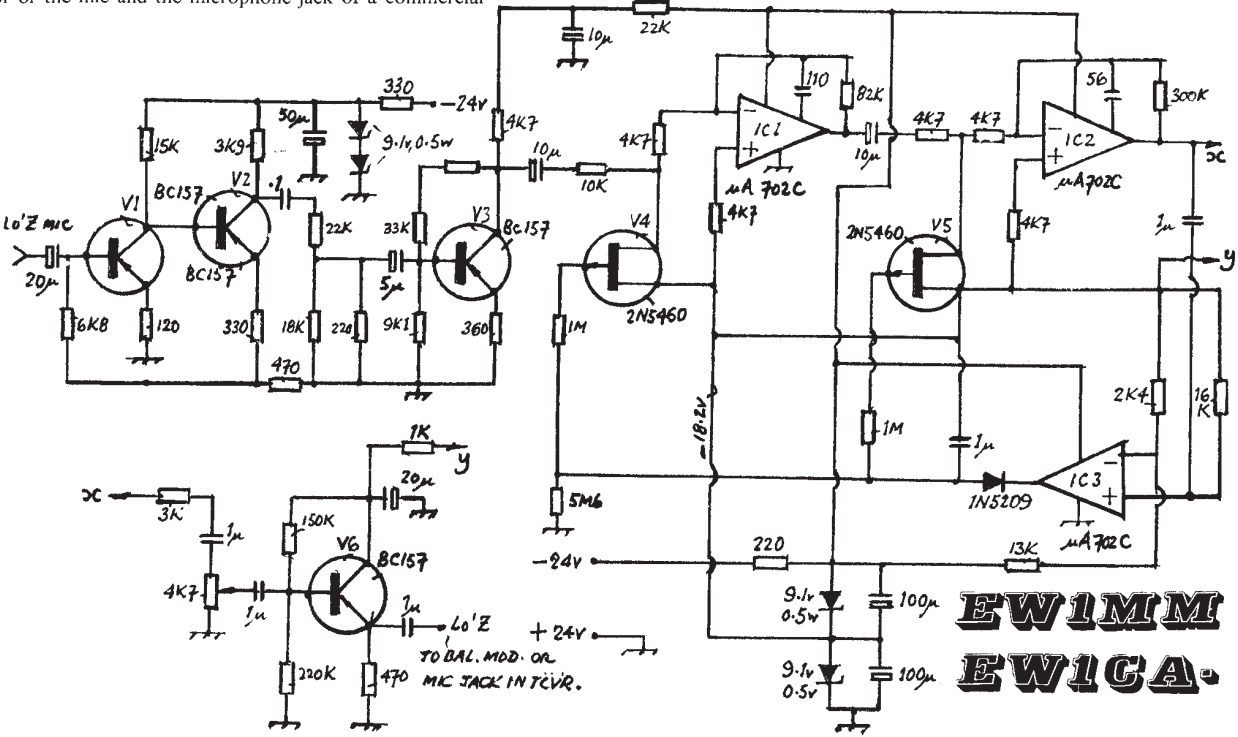
Aluminium that will bend with minimal fracturing is H4 or 1/4 hard, 16-20 gauge in thickness and can usually be purchased from metal merchants who advertise in Yellow Pages.

AN AUDIO SPEECH PROCESSOR

Gary Podgorny EW1MM & S. Sergeichuck EW1CA
P.O. BOX 76, MINSK 220050, BELARUS

Over the years, different speech processing circuits have been employed with varying degrees of success, to raise the average peak to peak power ratio of a voice signal and to improve communication effectiveness. In this device the processing is done at audio frequencies. The unit is used between the microphone and the transmitter : between the mic and a balanced modulator or the mic and the microphone jack of a commercial transceiver.

VT1/2/3 - High quality AF amplifier which uses BC157 or similar transistors IC1/2 - AF amplifier which uses uA702C or similar operational amplifier. IC3 - Comparator - uA702C, VT4/5 - Electronic attentuator which uses P-JFET 2N5460 or similar, to attentuate the signal to 20dB level. VT6 - Emitter Follower - BC157 or similar.



EW1MM
EW1CA

14th YEOVIL QRP CONVENTION FUNRUN 1998 RULES

FUNRUN BONUS STATIONS : GB2LOW from M0AGT in Stoke--Hamdon, Yeovil on 3.558 and 7.028 +/- 2 KHz. G4ELZ in Newton Abbot on 3.563 and 7.023 KHz +/- 2 KHz.G4DDX in Stevenage on 3.553 and 7.033 KHz +/- 2 KHz.

WHEN: Monday 6th April 1998 to Thursday 9th April 1998 inclusive

FREQUENCIES : 3560 KHz and 7030 KHz both +/- 10 KHz

CONTACTS : Contacts should be between QRP stations with a maximum 5 W output. However contacts with QRO stations are permitted but with a reduced points value. (See "Scoring" below). All stations may be worked ONCE EACH EVENING on EACH BAND. Funrun Bonus Stations will be operating each evening randomly for one hour on each band

CALL "CQ FR"

SCORING: Each QSO with another QRP station scores 10 points.

Each QSO with any Funrun Bonus Station (including GB2LOW) scores 25 points. Each QSO with a QRO station scores 3 points.

All duplicates must be marked and no points claimed. Points will be deducted for unmarked duplicates at twice that particular QSO score.

EXCHANGE: RST, Serial Number (see below), Output Power and Name.

SERIAL NUMBER : The three figure serial number must start at any random number of your choice not less than 100 and must then be incremented by one for each QSO throughout the whole of the contest. However the three Funrun Bonus Stations will all commence at 001.

ENTRY SHEETS : Separate log sheets for each band, with sub-totals for each evening , preferably in the RSGB format. A separate signed RSGB style cover sheet stating the Rig, Power Output and Aerial. Entries should be sent to Eric H. Godfrey, G3 GC, Dorset Reach, 60, Chilton Grove, Yeovil, Somerset, BA21 4AW to arrive not later than Thursdav l6th April 1998.

AWARDS : Certificates will be awarded for the highest score for any three evenings out of the four on each band and also for the highest total overall score for any three evenings on both bands. These evenings do not necessarily have to be the same on 3.5 MHz as 7 MHz. A certificate will also be awarded to the station consistently using the lowest power.

All four certificates will be presented at the Convention on l9th April 1998 immediately after lunch break. 'Listener reports' will be appreciated and a certificate will be awarded to the listener who submits the most comprehensive report.

NOTE : Apart from the Club's GB2LOW Funrun Bonus Station, this year, like the last two years, the other two Funrun Bonus Stations have been selected from amongst last year's entrants. This provides not only variety but also allows a geographical spread of their locations. This year, in order to help with the not uncommon problem of being called by QRO non-contestant stations, 3 points will be awarded for each of these contacts. Your comments on this and anything else relating to the FUNRUN will be very much appreciated.

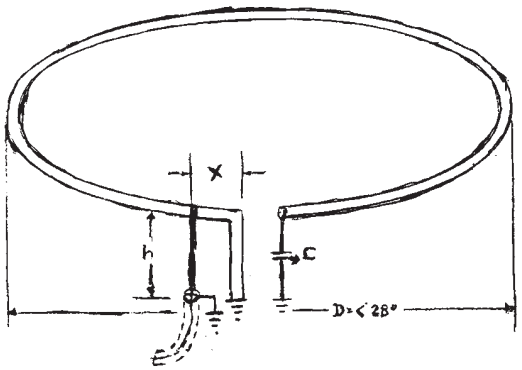
Further information from G3GC (QTHR), Tel No. 01935 475533

ANTENNAS - ANECDOTES - AWARDS

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

FACTORS AFFECTING THE EFFICIENCY OF THE DDR HULA-HOOP

Gus Taylor, G8PG, and Pierre Lhermite,F1CCE. Letters to G8PG pleae.



The most widely published version of this antenna is the W6WYQ 7MHz model appearing in ARRL publications. Dome (1) has provided a deep analysis of the antenna. It assumes that D =28°, h=2.5° and X has been adjusted for minimum s.w.r. Also that the antenna is made from 2 inch diameter steel pipe. The ground plane was 12 ft square, made from galvanised chicken wire. This version is shown to have a radiation efficiency of only about 2.75%, largely because of the very poor ratio of radiation resistance to loss resistance. Radiation resistance is in the order of 0.095 ohm and loss resistance 3.3 ohms. Losses can be reduced by using non-magnetic material such as copper in place of steel, designing the loop to operate with a very low value of C, and increasing the height above the ground plane by a factor of 3.5.The loop can be tuned over a 2:1 frequency range, but output will be down by 15 dB at the lowest frequency ! Increasing the height above the ground plane as suggested produces a dramatic effect. It increases the radiation resistance to about 1.1 ohm without increasing the loss resistance , giving an efficiency of about 25 % which increases the radiated power by 9 dB. Dome suggests that most of the losses will now be in the ground plane, and suggests replacing it with a mesh of copper wires. Boyer as far as we know was the first person to write up the DDR (2) and his remarks are even more enlightening. He states, following a lengthy series of professional measurements,that at its optium output frequency the DDR will only be about 2 dB down on an equivalent full height vertical antenna operating against an identical ground plane . For example at its optium frequency of 4MHz the DDR was only 2 dB down on a 100 foot tower when used with the same ground plane of of 90, half wave radials (at 2 Mhz it was 15 dB down as calculated by Dome). Few members will be able to get quite such a large ground plane, but it may be possible to get high efficiency in smaller space using the methods suggested in (3). Remember Planning officers cannot stop you burying radials, and even at 1f the DDR height is below the magic 10 foot planning level !

Refrences; (1) "A study of DDR antennas", Dome in "Antenna experimenters guide",ARRL. (2) "Hula-hoop antennas - a coming trend",Boyer, "Electronics" ,USA 11 January 1963.(3)"Efficient ground systems for vertical antennas",Doty,Frey and Mills, QST February 1983.

WARNING - SAFETY WITH THE DDR HULA-HOOP

If this antenna is used with high power very high rf voltages appear on it (thousands of volts). In such circumstances it it MUST be erected to that people and animals can not touch it. This problem does not exist at the international QRP power levels.

PUTTING THE HALF-SIZE G5RV ANTENNA ON TO EIGHTY METERS

M.A. Eales, MoAJL, 137 Heron Way, Cranham, Essex, RM14 1EE.

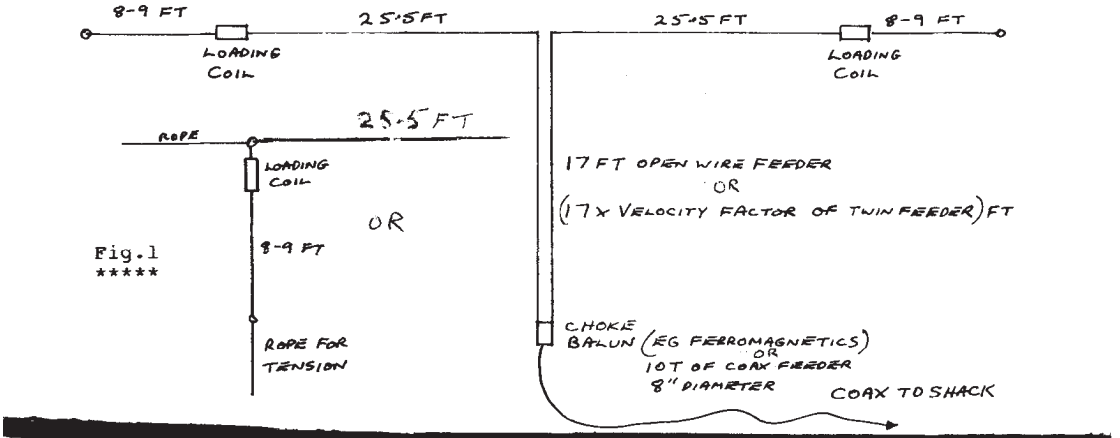


Fig.1
*****

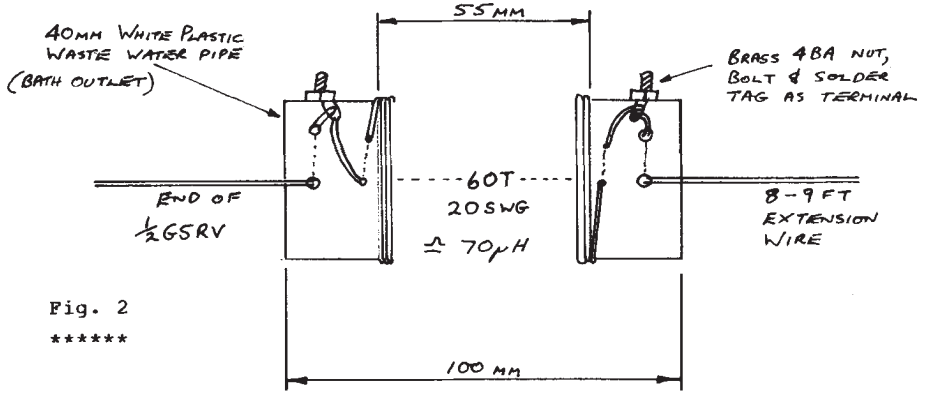


Fig. 2
******

Fig.1 shows the antenna modifications and Fig.2 the loading coil details. It is essential to thoroughly waterproof the loading coils either with several coats of varnish or heat shrink tubing.The end loading wires can be either horizontal or vertical.Tune up on 80m at 3560 kHz by trimming the end section lengths for minimum vswr. On the prototypw this was 1.3:1 with a 2:1 bandwidth of 50 kHz. On other bands the antenna is fed via a Z-match atu. It was found necessary to adjust the length of the co-ax feeder for best compromise vswr on all bands, 15m being the worst. If your location allows it 300 ohm feeder and an atu on all bands might make life easier. Not tried yet, but how about further coils and end loading wires to givve 160m coverage as well ?

AWARD NEWS

Special congratulations to Spenny, G6NA who used his solar powered station and rarely more than 1 watt to become QRP Master number 99. That is the real QRP spirit !! Our other Masters this time are DF7IS and W7CNL. Well done!

QRP WAC. G6NA(solar),W7CNL.

QRP COUNTRIES. 125 W7CNL,75 DF7IS, G6NA (solar), 25 G4LDS (ssb), G4UDG,GM3NGW (ssb).

WORKED G QRP CLUB. 160 G4ETJ, 100 GoUTF, 80 GWoMYY,2ToAMW (nice), 60 G2NA (solar),W7CNL, , 40 DL1HTX.

TWO-WAY QRP. 30 G6NA (solar), W7CNL.

Hearty congratulations to all the above on their QRP achievements.

NEED CUBA? CO8LY is active on cw 10 MHz 2100-2200 gmt and 18 MHz 2200-0000 GMT (10107 and 18093 kHz) and happy to work members although he is not QRP.POB 104,Santiago de Cuba,90100,Cuba.

ZB2 ENIGMA

When Jimmy, ZB2/G3HBN/P used his loop (see our last issue) to work G8PG on 21 MHz he was a nice 569, but when he changed to a 132ft LW on the hotel roof his signals were down two S-points. Gibraltar has always been a strange place for radio ! For example Gus could hear stations busy working Jimmy on 14, but could not hear Jimmy!

QRP SSB WITH THE PYRAMID.

Chris,G4LDS, wanted an all band indoor antenna for ssb DX. We suggested the G3FZG Pyramid we described in SPRAT 79. Chris had to fold it to get it into his loft,"doglegging" the lower sides of the loops. After some experimenst he now feeds it with 300 ohm ribbon via an ATU with an in-built 4:1 balun, although he thinks 6:1 would be better. Despite the sunspot minimum his DXCC score with 8w pep of ssb is already very impressive, and with the current improvement in conditions it should be shooting up. G3FZG became a Silent Key about the time that the Pyramid was published in SPRAT, so this is a very fitting tribute to his memory, especially if Chris does eventually make his DXCC.

WELL DONE THAT NOVICE !

Hearty congratulations to Ian, 2EoAOZ on being placed 3rd in the September 1996 RSGB QRS Contest and second in the March 1997 event. Also on getting his three students,who include his XYL Jackie, through their novice exam. He is now running another course. Jackie should by now also be a Club member.

SEASONS GREETING TO ALL AAA READERS. MAY 1998 BRING YOU AND YOURS HEALTH, HAPPINESS, PEACE, AND GREAT SUCCESS IN ALL YOUR QRP ACTIVITIES. MANY THANKS FOR YOUR SUPPORT IN 1997.

COMMUNICATIONS AND CONTESTS

Peter Barville G3XJS, 40 Watchet Lane, Holmer Green, High Wycombe, Bucks, HP15 6UG.
E-mail: "peter@barville.demon.co.uk" Packet: "g3xjs@gb7avm"

CZEBRIS 1997 RESULTS

The results from the non-UK entries are as follows:

		QSO's	Pwr
1.	OK1FKD	29	5W
2.	RW3AI	21	5W
3.	OK1AIJ	10	2W
4.	PA0RBO	7	2W
5.	OK1DSA	3	5W

My thanks to OK QRP INFO for the information, which went on to say that 54 different QRP stations were logged, from 12 countries.

CZEBRIS 1998

The contest will be held under the same rules as before. The rules were published in SPRAT 89, but to summarize:

1. When: 1600z 27 Feb - 2359z 1 Mar.
2. Where: CW only on 3560, 7030, 14060, 21060, 28060 (all +/-).
3. Power: not to exceed 5 watts output. Stations unable to measure output can calculate using half their DC input (eg 10W DC = 5W RF output).
4. Call "CQ ARP".
5. Exchange: RST/Power/Name.
6. Scoring: Stations may only be worked once per band.
   Only QRP/QRP contacts may be counted.

Your location	QSO with QRP stn in			
	UK	OK/OM	Eu	Non-Eu
UK	2	4	2	3
OK/OM	4	2	2	3
Eu	4	4	1	2
Non-Eu	4	4	2	1

No multipliers, final score is total number of points.

7. Logs: separate sheets for each band showing (for each qso) Date, Time, Call, Exchanges (RST/Pwr/Name) sent/received. Also include a summary sheet showing your name and callsign, claimed score for each band, and brief details of you station.
8. UK stations send logs to G3XJS
   All other stations send logs to P Doudera OK1CZ, U1.Baterie 1, 16200 Praha 6, Czech Republic.
9. All logs to be received by 15 Apr.

1997-1998 HANDBOOK

Although the handbook suggests sending changes of callsign or address information to either John G0BXO or myself, such amendments should only go to John. I will, of course, forward any information that comes direct to me - and have already done so.

WINTER SPORTS

Hopefully this edition of SPRAT will reach you just before (or at least during) our annual 'Festival of QRP'. At the time of writing, the hf band conditions have been showing excellent signs of improvement, and so I'm hoping to see plenty of support from our overseas members. Let's make our mark on ALL the bands, and set them buzzing with QRP qso's. Don't forget, it's not a contest but please send your logs to me (by 7th Feb).

14th YEOVIL QRP CONVENTION

Rev. George Dobbs, and his wife Jo-Anna, will be Guests of Honour at the 1998 Convention Dinner (Saturday 18th April). George will open the Convention the following morning, and give a talk during the afternoon. The weekend promises some excellent opportunities to socialize, quite apart from the (always superb) Convention. Contact Peter G3CQR for further information: Tel 01935 813054.

The associated FunRun takes place between the 6th and 9th April inclusive, 1900-2100z, 3560 kHz and 7030 Khz (both +/-). Call "CQ FR", and exchange RST, Serial Number (must start at any random number of your choice not less than 100), Output Power and Name. All stations may be worked once EACH evening on EACH band. Each qso with another QRP station scores 10 points, qso's with any FunRun Bonus Station score 25 points, and qso's with qro stations score 3 points. The Bonus Stations are GB2LOW, G4ELZ and G4DDX. Further details are available from Eric G3GC: Tel 01953 475533.

CHELMSLEY TROPHY

I hope you are going to send an entry for the 1997 trophy? In recent years there have been relatively few entries, and so your chances of success could be high. Gerald G3MCK did try some simplified rules for last year (in order to encourage more entries), but I notice that it is still the original, and more complex, set of rules which appears in the latest Handbook. I will be flexible and accept logs according to last year's simplified rules: Send me (by 15th February) the total number of QRP/QRP qso's, QRP/QRO qso's and the total number of DXCC countries worked - ie just three numbers. What could be easier?

SOMERSET HOMEBREW CONTEST

Tim Walford has kindly agreed to sponsor the 1998 event, and is generously offering a £50 voucher as first prize, which can be exchanged towards any current Walford Electronics product. The contest will be run under very similar rules as last time:

1. The contest is open to all single operator QRP stations using home made (including kit) equipment. Either (or both) the tx or rx must be home made. It is not necessary to have built the equipment yourself, although the scoring system slightly favours those who have built their own. QRP is defined as 5 watts (or less) output cw, or 10 watts (or less) pep ssb.

2. Activity: around the normal QRP frequencies on the 80m band ONLY. Any mode is permitted, and cross mode contacts are allowed. Any station may only be claimed once.

3. When: any continuous four hour period between 1700z and 2359z on Saturday 21 March 1998.

4. Call "CQ HBC Contest" (ssb) or "CQ HBC Test" (cw).

5. Exchange: RST, SC Serial (you must start with any random number of your choice not less than 100), Power. Somerset Contest entrants should send reports such as : 579/SC232/3W, but non-entrants' serials can be any number and they may send (eg) 579/001/3W.

6. Scoring:

Points	QRP/QRP	QRP/QRO
Within own continent	5	1
Outside own continent	10	2

The final score is the total number of points (no multipliers), BUT deduct 25 points from your total if you did not build either the tx or rx yourself.

7. Entries by 30 April to G3XJS, with log sheets showing times, stations worked, reports sent/received and points claimed, plus details of your equipment, power and antenna. Please also include a declaration that your station was operated in accordance with the spirit of the contest.

This is one of the very few contests aimed specifically at the homebrewers amongst us, and as such I think it deserves our support. As in previous years there will be a draw for the second prize (a Dual Low Pass Filter kit for any pair of hf bands) held from amongst all correctly completed entries which include the answers to the 5 questions printed in SPRAT 88 (page 31). Space here is limited, but an ssae to me will also give you a copy of the questions.

1998 QRP CALENDAR

I have prepared a calendar for the coming year, but there will no doubt be additions and amendments to come. Please let me know in good time if you would like me to give publicity to other QRP events.

The deadline for the next issue is the beginning of February, but in the meantime, may I wish you all a very happy, and successful, QRP year.

1998 QRP CALENDAR

1 Jan	**Last Day of 1997 Winter Sports**
1 Jan	**0900-1200z AGCW Happy New Year Contest**
3-4 Jan	**1500-1500z AGCW Winter Contest**
10-11 Jan	**1200-2359z Mi QRP Club Contest**
7 Feb	**Last Day for Winter Sports logs to G3XJS**
7 Feb	**1600-1900z AGCW HTP (Straight Key) Contest**
15 Feb	**Last Day for Chelmsley logs to G3XJS**
22 Feb	**0600-0730z OK QRP Contest**
27 Feb -1 Mar	**1600-2359z CZEBRIS 98**
21 Mar	**Somerset Homebrew Contest**
6 Apr - 9 Apr	**1900-2100z each day. Yeovil QRP FunRun**
15 Apr	**Last Day for CZEBRIS logs to G3XJS and OK1CZ**
18 Apr	**Yeovil QRP Convention Dinner**
19 Apr	**Yeovil QRP Convention**
1 May	**1300-1900z AGCW QRP/QRP Party**
14 Jun	**The G3TUX 'QRP Summer Party' (Change of venue)**
17 Jun	**IARU Region 1 International QRP Day Contest**
4-5 Jul	**1500-1500z Original QRP Contest**
17 Jul	**Last Day for QRP Day logs to G3XJS**
18-19 Jul	**1500-1500z AGCW Summer Contest**
5 Sep	**1300-1600z AGCW HTP (Straight Key) Party**
24 Oct	**Rochdale QRP QRP Convention**
15 Nov	**AGCW HOT Party**
26 Dec -1 Jan	**G-QRP Club Winter Sports (G4DQP Trophy)**
	Maximum QRP activity on all bands, logs to G3XJS by 7 Feb 1999

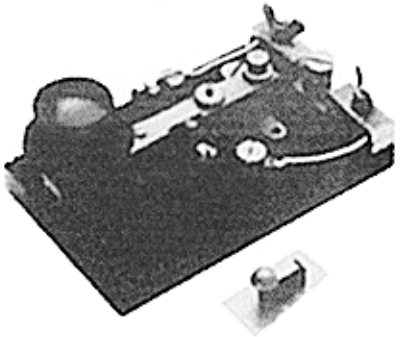
HELP WANTED: Tom Frankland, G4INM, would like to add WARC bands to an HW9. Can any club members help Tom with this conversion? Tom Frankland G4INM, 131 Rutland Road, Chelmsford, Essex, CM1 4BN.

NOVICE NEWS

Steve Ortmayer G4RAW
14 The Crescent, Hipperholme, Halifax. HX3 8NQ. Tel: 01422-203062

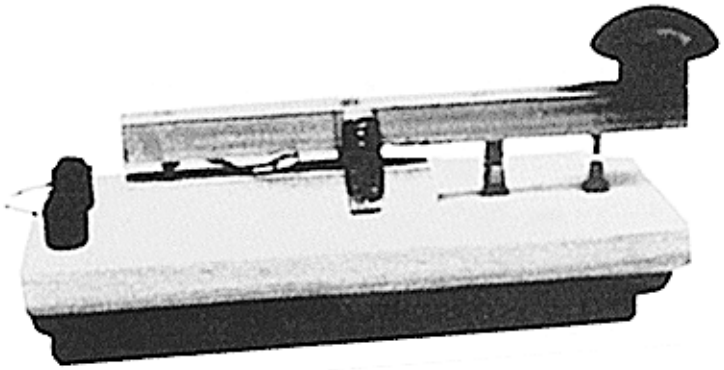
Geoff 2E0AMW has sent me details of the QRP Section of the Poole Radio Club that he runs. Many local radio club members have become a bit jaded with black box operation so QRP construction and operation bring new interest to the hobby. Why not start a QRP Section at your local club? Geoff also asks if the TAG transmitter will go on Top Band (160m). Well – if you look at the famous book Solid State Design for the Radio Amateur" there are details showing how to put the TAG transmitter on 160m.

Last time I asked if a member had an aid memoir to help with the wire positions on a 13amp UK plugs. Harry recalls a jingle from years ago "George BROWN is a LIVE wire". This would help recall the colour of the live wire. But Harry say no one now will remember who George Brown was! I was trying to think of a jingle that would put the live brown wire to the right. We now have Gordon Brown, who should be left but is really right, so this would cause confusion! How about : Blue sky LEFT BROWN turds RIGHT. But can one say turds to a politically correct Novice Class??



I have been making some Morse keys. If you have small QRP transmitter like a ONER or Pixie then a small key looks good. I used a micro switch with a lever arm from Tandy. The switch is mounted on a bit of single sided PCB with "land" scraped in the copper foil. The switch contacts are soldered to the copper along with the wires to the key jack.

I have also made a full size key with aluminium channel from a DIY shop. One length forms the arm and another shorter length forms the pivot. This is screwed down to a wood base. A plastic doorknob makes the human finger interface.



Not much news from Novice members this time – please let me know what you are up to....

VHF MANAGER'S REPORT

John Beech, G8SEQ 124 Belgrave Road, Wyken Coventry CV2 5BH
Tel. or Fax 01203 617367. Packet Homebbs : GB7COV. Email : johng8seq@aol.com

This quarters report will be a rather truncated affair as I have had (and am still having) problems with my PC. After all the hassle I have had recently, I sometimes wish I had never seen a PC, let alone own one!

First the Backpackers 2m Contest. I had a pleasant surprise through the post from the RSGB. I was placed highest in the under 1w single operator, single antenna, section of the contest. I haven't seen all the results of the contest published as yet, so I may have been the only entrant! I seem to remember that activity from QRPers was low on the day, which is a pity as it is an ideal contest for the VHF QRP enthusiast. There were two other contests in progress at the time, so there were plenty of signals audible. Oddly most of what I worked from the Midlands would normally be regarded as DX for QRP – in France, Isle of Sheppey, Wales, Yorkshire and Lancashire. Propagation seemed to favour the SE.

On propagation, I found a useful information source on the Internet for 6m and HF enthusiasts. The address is http://holly.cc.uleth.cal/solar/www/realtime.html or you can get it via www.xasf.demon.co.uk and click on "links", the "Ham Radio".

John, G0UYT sent cm a copy of a German article to translate, which has details of a 6m transverter which can be used for either 28 MHz or 144 MHz drive. From what I have managed to translate so far, there are no unusual components. A PCB track pattern is given, but it is unclear whether a double-sided or single sided board was used. The article was first published in December 1990 CQ-DL. If anyone wants a copy, just send me four first class stamps with your address.

Also I have a request for a transverter to go from 6m to 2m – does anyone know of one to do this?

Finally, if anyone has sent me email since 20th October '97, please can you re-send it, as the letters have been wiped off my system before I got chance to read/reply to them.

SILENT KEY SALE: Complete 20m CW Station, MFJ9020 XCVR, MFJ 971 ATU, 105B Clock, Paddle and Straight Key – all in purpose built carrying case plus separate Watson 5A PSU. £220 inc.
Complete All Band SSB/CW Station, Index Mk1 QRP PLUS XCVR plus MFJ 971 ATU, 105B Clock, Paddle and Straight Key – all in purpose built carrying case plus Gould 10A PSU. £410 inc.
Ring G2FXO (QTHR) 01454 – 615271

SSB COLUMN : Dick Pascoe GØBPS

Seaview House, Crete Road East, Folkestone. CT18 7EG. Tel: 01303 891106
Email : Dick@kanga.demon.co.uk. via packet to GB7RMS

Readers may have noticed the lack of an SSB column in recent issues, this has been because of the lack of SSB news rather than a lack of initiative. If you would like to see this column continue please send me your tid bits, and any other ideas, comments about this mode that you may have.

You can send them to me via Mail or packet: GB7RMS, or Email: Dick@kanga.demon.co.uk

MEMBERS ADS - MEMBERS ADS - MEMBERS ADS - MEMBERS ADS - MEMBERS ADS

FOR SALE: Communications Receiver – Lowe DRX30 0.5 – 30 MHz AM,CW,SSB. Mains operated, all solid state £75. Ivor, G3JES, 01227 – 451441

FOR SALE : RSGB Bulletins 1962-67. Radio Communications 1968-96. Offers. Peter G3ONL, QTHR or ring 01728 – 860607.

FOR SALE : RACAL RA17 Receive – spare valves – fotocopy service manual £100. G4FXI, 01296-421542

FOR SALE : Leader Signal Generator to 415Mhz £70, Yeovil 20/80M SSB/CW T/RX 12 watts PEP, very well constructed in a split CB type case £135, Howes AP3 Speech Processor, boxed & diagram £7.50, G4OPE 160Mhz Counter, 4 off-sets or direct, diagram £25, VK2DOB!!! 80 Metre DSB T/RX full kit part built with diagrams £25, G4KKI 80 Metre CW T/RX, req Xtal, diagram £20, Mike G0CVZ Tel : 01733-222588 or work 01733-353707

A DATE FOR YOUR NEW DIARY
THE ROCHDALE MINI-CONVENTION 1998
Will be on SATURDAY OCTOBER 24th 1997

Amateur Band Mixing Crystals

The club now hold a complete stock of crystals to mix all amateur bands from the popular 9MHz IF + 5 – 5.5MHz VFO. The are 21.500, 24.500, 28.500, 32.500, 35.00, 39.00 42.500, 43.00 MHz and carrier crystals on 9001.5 and 8998.5. All are priced at £3 each and available from G3RJV. Please send an address sticker with orders.

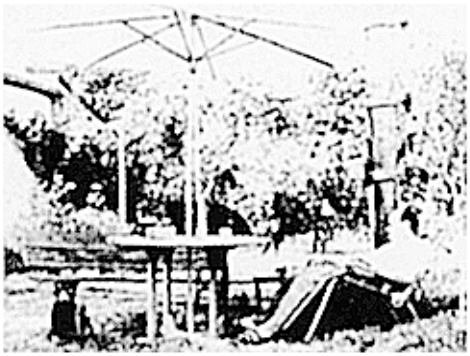
MEMBERS' NEWS

by Chris Page G4BUE

Highcroft Farmhouse, Cay Street,
Pulborough, West Sussex RH20 2HJ.
Tel: 01798 815711 Fax: 01798 813054
E-mail: g4bue@adur-press.prestel.co.uk
Packet: GB7DXS on UK DX PacketCluster

New member **G8PP** runs a HW8 but is limited with antennas because he lives in a local authority sheltered home. Les says the windows are double glazed but he's got a thin wire through an aperture in the surround. The windows were previously metal framed and in desperation he ran a single wire to the bare metal and it worked! His first QSO was with a W1 on 20m CW. Les will be taking the HW8 to VO2 where he was planning to be QRV in December as **VO2PP**. **G3JNB** QSO'd special event station NN5OCIA (50 year anniversary of the CIA!) on 20m. Victor's first QSO across the Atlantic with 1.5W.

F6COW is a good friend of **F6EQO**, and the photograph shows him operating Jean-Pierre's QRP station (MFJ 9020) when he visited in August. Congratulations to Stan, **G4MQC**, on winning the less than 5W section of the 2nd Original QRP Contest by quite a wide margin. Erkki, **OH1LVR**, has changed his call to **OH1UP**. .



Michel, F6COW, relaxing while QRPing.

GM3MXN reports "conditions are on the up"in October with USA QSOs on 15 and 17m and **HP1AC** on 14060kHz, all with his 6 metre high 2 x 15 metres doublet fed with 300 ohm ribbon and ATU. **G3XJS** QSO'd **VK3BX** ("my first VK in ages"), as well as two-way QRP QSOs with **ZB2/G3HBN**, **AA2NL** and **K1MZ**. The old master **GM3OXX** worked two-way QRP into ZL on 20m in October. George was using his usual 1W and a wire antenna. Arnie, **CO2KK**, is QRV with 5W and made several SSB QSOs to Europe with a dipole.

Jim, **KJ5TF**, and Bob, **N9ZZ**, (R. Schill, 193 Northpointe Dr., Mountain Home, AR 72653-8124, USA), started the The Arkansas QRP Club in November 1996. It now has over 170 members, produces a quarterly newsletter and has nets on 3560kHz on Mondays at 0030z and 7042kHz on Tuesdays at 0030z.

G3OEP took part in NFD from a high water table site near the Yare estuary (photo above) with Mark, **2E1FDN**, using an Argonaut on a shelf behind the driving seat of David's Fiesta car with two antennas: a 12 foot whip for one band and three pieces of wire suspended 18 feet up a dead tree joined at the top to make a quarter wave antenna tuned against ground on 80, 40 and 20m and three quarter-waves on 15m. David says they made a "dreadful QRP score", and at 75 years of age he cannot now stay up all night. They managed 40 QSOs in seven hours operating. David plans to take part in 1998 but with 160m then.

Esconor of France (Z.I., F21150 Venarey Les Laumes, France; tel:+33 03 80 96 91 50; fax: +33 03 80 96 15 75) have introduced the Galene DK, a semi kit (as the AF section is the only part to build). It is triple conversion, 8 and 45MHz using three quartz filters and three high level mixers, has a digital VFO, back-lit LCD 2 x 16, digital S meter, split operation, RIT, SSB and CW modes, weighs 2 kg and measures 200 x 180 x 83mm. The base module costs FF 3,600 (US $600) and each band module (not included with the base module) is FF790 (US $130) plus mailing. **WØRSP**, has updated his *The Joy of QRP* book. It is available at $23 post paid in the USA ($26 overseas) from Ade at Milliwatt Books, 526 N. Dakota St. Vermillion, SD 57069, USA.

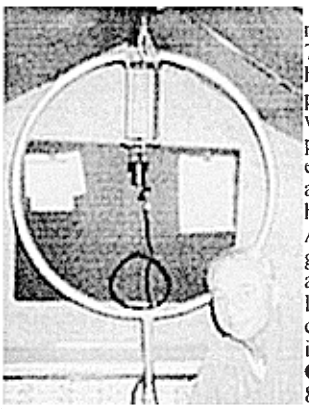
NorCal has a UK agent **GØXAR** (S. Farthing, 38 Duxford Close, Melksham, Wiltshire SN12

6XN) for subscriptions (£12.50 per year, four issues of *QRPp* sent airmail). Steve is also the European agent for NorCal kits. **GØROT** hopes to be QRV for the Winter Sports after being QRT following a house move. Mike will be using his FT560 turned down to 5W with his favourite antenna, the Bobtail, hoping it works as well above sandy soil as above the London Clay he had below him before!

GØWMJ built the 80m , 40m and 20m versions of the rig described by **G3YCC** in his July/August 1996 *Practical Wireless* article. Jim is wondering if anyone has thought of making it into a QRP SSB transceiver? Wallace, **GMØGNT**, confesses to being a "Ten Tec nut" (owning a Century 22, Corsair II and a T-Kit 1220 2m VHF set).

GØKZO QSO'd **9M2OM** (G3NOM) on two-way QRP in June by a sked on 20m CW. Eva said it took 15 minutes to exchange the QSO information using her 5W from FT990 into a 100ft dipole 33ft high. She received the QSL from G3NOM in person when he visited the UK this summer. **G4LQO** has a "niggle" with his QRP+ in that he has to get behind it with a screwdriver to change band to ensure he does not exceed 5W. Bill wonders if anyone has a mod to get round this? He says there is too much QRM from QROers on 10116 and 18086kHz and suggests we go higher up the band for two-way QRP QSOs, above 18090 and 10130kHz.

GØFQI likes to "combine a bit of exercise with some of my QRP activities". Don is shown above operating his homebrew 40m CW (Howes kits) 3W transceiver (with inbuilt GØBZF micro keyer) into a wire antenna (not shown) tuned against a piece of wire clipped onto his bicycle with a homebrew ATU, on top of Hunsbury Hill near Northampton where he has made many good QRP QSOs around Europe. Members will be saddened to hear of the passing of keen QRPer Ken Fisher, **GØLKX**, (4469) who died on 24 June. Our condolences to his family, including his son Jan, **GØIVZ**.



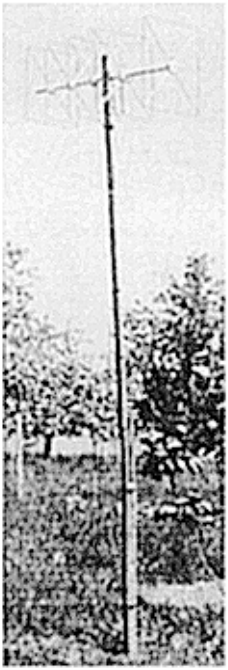
GØDJA has moved and his 73kHz activity has had to be put on ice for a while. Dave has put up a short end fed wire, and a friend lent him a Racal ASTU which gets him on 160 and 80m. The late **GØLQJ** came up with an idea to get **G4LQO** on 80m with a mag loop that would fit into Bill's loft. The 80m loop (shown above with Bioll) has 34 capacitor plates (the high number being necessary to tune such a small loop on 80m), and by using a DC motor tunes very well on 20, 30 and 40m as well as 80m. Bill says that anyone hearing him on 80m is hearing the loop in his loft.

HB9CJR is often QRV portable with an all (except the bug key) homebrew station which packs into a rucksack maximum weight 6kg. Hein operated in the Swiss National Mountain Day on 20 July. Congratulations to Brian, **G4SBU/EI3IK**, on his marriage to Marion on 29 August. Graham, **G1LGB**, and Dave, **G4RSR**, attended the wedding and reception in Farnborough, and we wish Marion and Brian every happiness in their marriage and future together. **9A3FO** invites members of G-QRP club to join the 9A QRP Club. Details from Miaden at Franjevacka 5, 42220 N. Marof, Croatia.

Internet users might like to check out the latest QRP DX information on **G3XJS**'s Web site at <http://www.barville.demon.co.uk/qrpinfo.htm>, and for general QRP information on the Australian QRP Home Page by Peter, **VK1PK**, at <http://www.pcug.org.au/~parkerp/>. If you are interested in the Morse code then check out the *CW Reflector*, to subscribe send an e-mail to <Majordomo@qsl.net> with the following message in the body: subscribe cw <email addr>. The Benelux QRP Club have an experimental home page at <http://www. xs4all.nl/~pa3asc>.

DF1GN converted the measurements of the G8ZRY five element 2m quad in the *QRP Antenna Handbook* into centimetres before building it (see photo next column). Norbert found it only needed only a little correction for a good SWR on 144300kHz and used it the following weekend in the UHF/VHF Contest. 5W CW and SSB QSOs with **F5KFE/P** 438km away made him very happy and very complimentary of the antenna designs in the *QRP Antenna Handbook*.

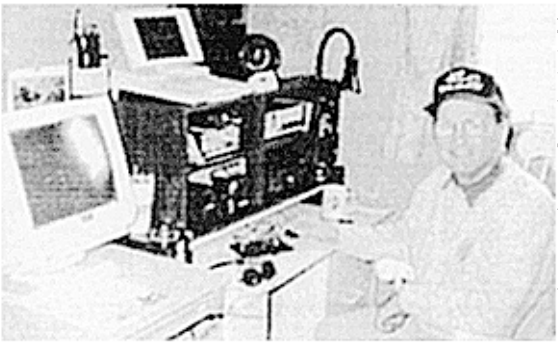
The Belgian W-QRP CLUB (QRP Club de Wallonie) are a busy group: Willy, **ON5KN**, has



just finished building a digital VFO (like the one in SPRAT89, but using a MPU ST62), and Guy, **ON5FM**, has built a DC QRP CW transceiver for 80m band from a W1FB design. Jean, **ON5KZ**, has built an octogonal magnetic antenna, 90cm diameter for his next holiday in Austria and (with Jean, **ON7JD**, and Claude, **ON4LCA**,) has built a MALTA 40 (SPRAT 78) but for 20m band. Guy, **ON6GW**, and Andre, **ON5UP**, have built an ATU (SPRAT 78/79) with a SWR bridge (W1FB design *QST* Julk 1986), although they had to isolate R6 to make the meter work correctly. Finally, Andre, **ON5UP** has built a 4m diameter magnetic square antenna from 22mm copper tube and has already made 50 QSOs with it on 40m.

DL2BQD holidayed in July on the Yorkshire Moors and the landlord allowed him to put up a long-wire from the window to a tree for 40m so he was able to be QRV with the DTR7. Dieter was also QRV as **M/DL2BQD/P** from Runswick Bay, north of Whitby on two occasions. Singapore Field Day was held for the first time between 1000-1300z 15 November on 14028 and 21028kHz only. 9V1YS was QRV but does anyone know anything about this event and whether it is going to be held again in 1998?

GM4AGL (below) in his 'JOE 90' outfit in the shack with TS450S, Argosy II, DTR7, MFJ948 ATU, Datong FL3, Kenwood TM241. Bill uses a Butternut HF9VX and a centre fed doublet antennas and a PC computer top connect to the GB7SDX DX Packet Cluster. He is QSL manager for several DXpeditions (TY5A, 5V7A, 9G5RF etc) and has two brothers Ian, **GM4ARJ**, and Robbie, **GM3YTS**. Bill says, "Just heard **GM3OXX** 1 watt work **9M2OM**/P on 20m, George is amazing".



While on a caravan holiday in Cornwall in July, **GWØTQM** used a Mizuho MX14 on 20m with a telescopic whip on a remote mount. Carl's first QSO with the whip on an outside table was with **ON5IG** on 20m, but when he put it on top of the caravan and ran two quarter-wave wires to his car luggage rack and the caravan window, he made better QSOs. He then tried a mag mounted 20m whip bought a couple of years ago at a Chester Club junk sale, about four feet long with base and centre loading, and ATU to match to the MX14. Following a CQ on 14060kHz he was answered by **GØWAL/MM** running 5W into a mast mounted antenna off northwest Spain.

There has been some good QRP DX this summer; **KZ1L/TF** operating QRP was heard in August around 14060kHz, as was **P43HK** (5W homebrew tcvr) and **GJ/DF3OL** with a QRP+ and a G5RV. **G3XJS** QSO'd Roger, **J6/GØTYX**, on 20m and Kim, **OX3FV** on two-way QRP in July. Kim was running 5 watts from a QRP+ tcvr, into an inverted vee dipole and told Peter he is QRV for two years. At the beginning of August **PZ1DG** (5W MFJ-9020 into a 3 element yagi) answered Peter's CQ on 14058khz at 2050z with a super signal.

Tom, DL1AAA, and his xyl Christiane, DL3ABP, were QRV QRP 29 August/11 September as DLØQRP from the Eiderstedt Peninsular (North Sea) 15km east of St Peter-Ording and several North Sea islands (IOTA EU-042). Jimmy, G3HBN, was QRV again 20 September/14 October as **ZB2/G3HBN** with a QRP+ and loop and long-wire antennas.

Rich, **G4PCE**, uses a Ten-Tec 580 Delta for his 80m CW QRPing. **W7CNL** in Idaho looks for members (often during his sunset/sunrise windows) with his large 20m mono-band yagi. Jack also has a tri-bander for the other bands. **G3XJS** and **G4MQC** were among ten members Jack worked in the October ARCI Contest. Congratulations to **G3LHJ** on his 1996 CQ CW Contest QRP effort. Derrick came world high on 20m. **GM4HQF** was in the RSGB 21/28MHz CW Contest with 4W and mobile whip on his balcony. Dave had QSOs with JA and W6 on 15m in addition to W1,2,3,4 & 8. He QSO'd Rumi, **LZ2RS**, on 20m a few times who is very proud of his award for winning the DX QRP section of the 1996 Contest.

Christmas will probably be over by the time you are reading this. June and I wish you and your families a very Happy New Year. Let me know how your winter goes, by 20 February, please.

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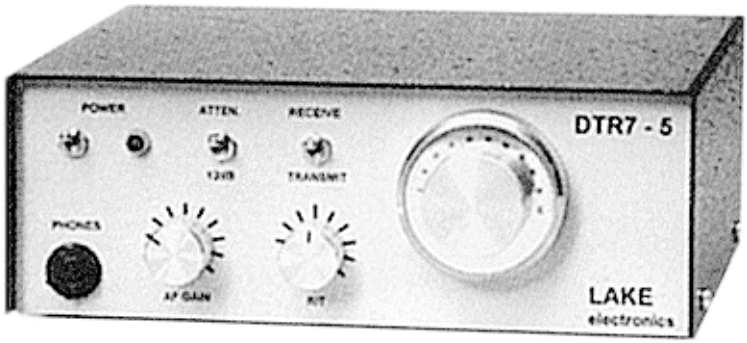
The Kits with ALL the Bits !



The **"DTR" series of Single Band CW Transceivers**, sold world wide for nearly ten years, have been upgraded ! Power output has been increased to a nominal five watts - up to about 8 (if you *must* QRO!) and down to a around 25 milliwatts if you're really keen.

The low pass PA filter, a 7 element Chebychev configuration, achieves better than -50dB second harmonic level with other spurious signals virtually non-existent.

The receivers, Direct Conversion, have a sensitivity of better than 1μV MDS and selectivity (an audio filter is included, of course) of about 250Hz @ 6dB. VFO coverage is nominally 7.0 - 7.1 MHz and 3.5 - 3.6 MHz respectively. Since the scale on the new silky-smooth Jackson drive is calibrated 0 - 100 this gives a good indication of frequency.

Audio output - up to 1/2 watt (8 ohms)
Antenna - 50 ohms, SO239 connector.
Power requirement - 1A (key down) at 12 - 14 Vdc

RIT ± 4kHz
Receive Attenuator 12dB

(For a completely independant assessment and an objective comparison with other QRP rigs, see Peter Hart's review in November 1995 RADCOM.)

Kit price, including ALL components AND hardware,

DTR3-5 (80m) or DTR7-5 (40m) £97.80 plus £4 postage.

Either kit can be specially built to order for £162 inclusive.

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