SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED·TO·LOW·POWER·COMMUNICATION

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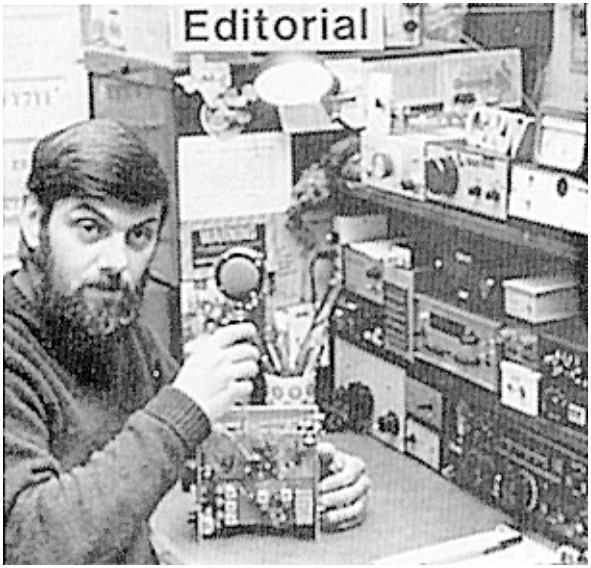
RICK CAMPBELL KK7B AND ROY LEWALLEN W7EL

Two G QRP Club members have just been granted Technical Excellence Awards by the ARRL Board. Rick for his article 'A Single Board No-Tune 920MHz Transverter and Roy for 'MININEC, The Other Edge of the Sword' Congratulations to them both.

JOURNAL OF THE G QRP CLUB



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I regret to say that this issue of SPRAT will probably reach you late. A late summer holiday with the usual backlog of mail followed by a major event at St. Aidan's Church all conspired to delay its compilation. But please do remember that not only SPRAT but all the services in the club are offered by members who give their own precious and limited free time. No one gets paid and no one works full time for the club (although it sometimes seems like it to some officers!). This issue comes with the MEMBERS HANDBOOK, an important book that members should keep safely. Put it on the operating desk to check off all those members you plan to work during the coming year. Although things change from time to time, it does explain who to contact for all major club services and enquiries. Please consult it before contacting us because it can save your time and our time. My special thanks are due to Peter, G3PDL, who collated and word-processed the Handbook this year.

Some members have been asking about a new edition of the CIRCUIT HANDBOOK. We certainly have that in mind and its compilation is about to begin. As yet we are not sure if the club will publish it, that depends upon the sales of the ANTENNA HANDBOOK (have you get a copy yet ?). There is so much good materal that the real problem will be deciding what to exclude. It is on the way.

72 fer nw

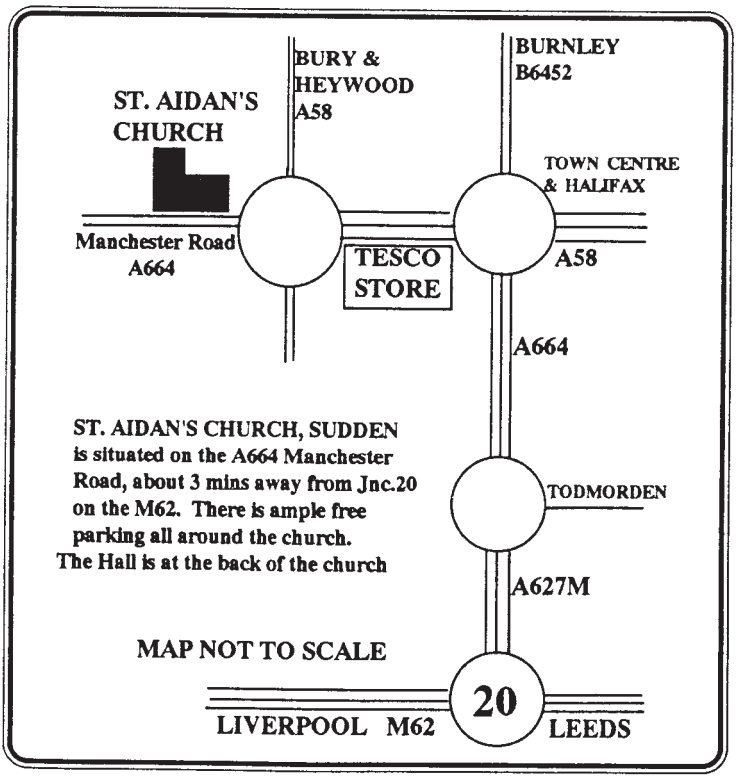
G3RJV

G QRP CLUB
MINI-CONVENTION 1992

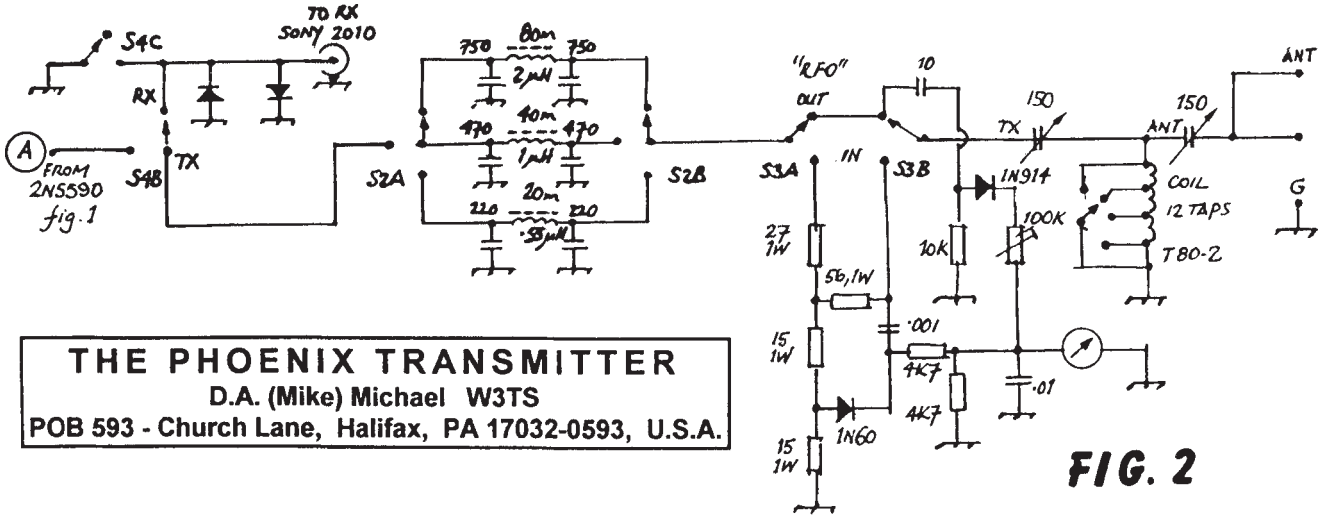
The Northern Gathering of the G QRP Club
SATURDAY OCTOBER 17th 10am - 5pm

St. Aidan's Church Hall, Manchester Road, Rochdale, Lancashire
Admission £1 : Doors Open at 10am : Talk-in on S22 from 9am
All the Usual Attractions : Large Social Area : Lecture Programme
Bring/Buy/Swap : Surplus/Component/Kit Sales : Equipment Display
Bring your Items for Sale - Bring Your Projects to Show/Compare
Food and Drink Available All Day inc. the 'Famous Pie & Peas

LECTURES BOOKED FOR THE CONVENTION : John Hey G3TDZ : Phasing Receivers
Luke Dodds W5HKA : QRP in the U.S.A. and The Famous David Stockton "Any Questions"



FOR LOCAL ACCOMMODATION SEE THE LAST SPRAT OR RING 0706-31812



THE PHOENIX TRANSMITTER

D.A. (Mike) Michael W3TS
POB 593 - Church Lane, Halifax, PA 17032-0593, U.S.A.

FIG. 2

The transmitter is a collection of different circuits that have worked well in the past. I wanted a built-in power supply and SWR bridge and antenna tuner. The whole package is built into a 2 x 5 x 7 inch aluminium chassis. The bottom lid, which now becomes the top panel, is a piece of 5 x 7 inch a single sided copper clad board. The transmitter and SWR circuit and antenna tuner parts are mounted to the copper side and hooked up using "SKY WIRING" (another name for ugly construction - an engineer friend of mine picked up the circuit board and took a look and said "OH SKY WIRING").

Inside the chassis are mounted an old brass hand key and the power transformer and filter capacitor. Also a small barrier strip and a fuse holder for the AC wiring. The brass hand key is mounted so that its arm sticks out through a hole in the front. That way only the knob is exposed and it makes the package smaller.

The VXO capacitor has one plate bent to contact the other plates when full meshed. This saves a switch and gives a different frequency than when the VXO capacitor is in the circuit. I did not include the usual inductor in the VXO because it would have to be optimised for each crystal and band. The SWR bridge can be used to reduce the transmit power if required. It can also be used as an attenuator for the receiver if needed. Just remember to switch it out for full power tx. I used manual T/R because I ran out of room in the small box and it also saves some power then operating with batteries.

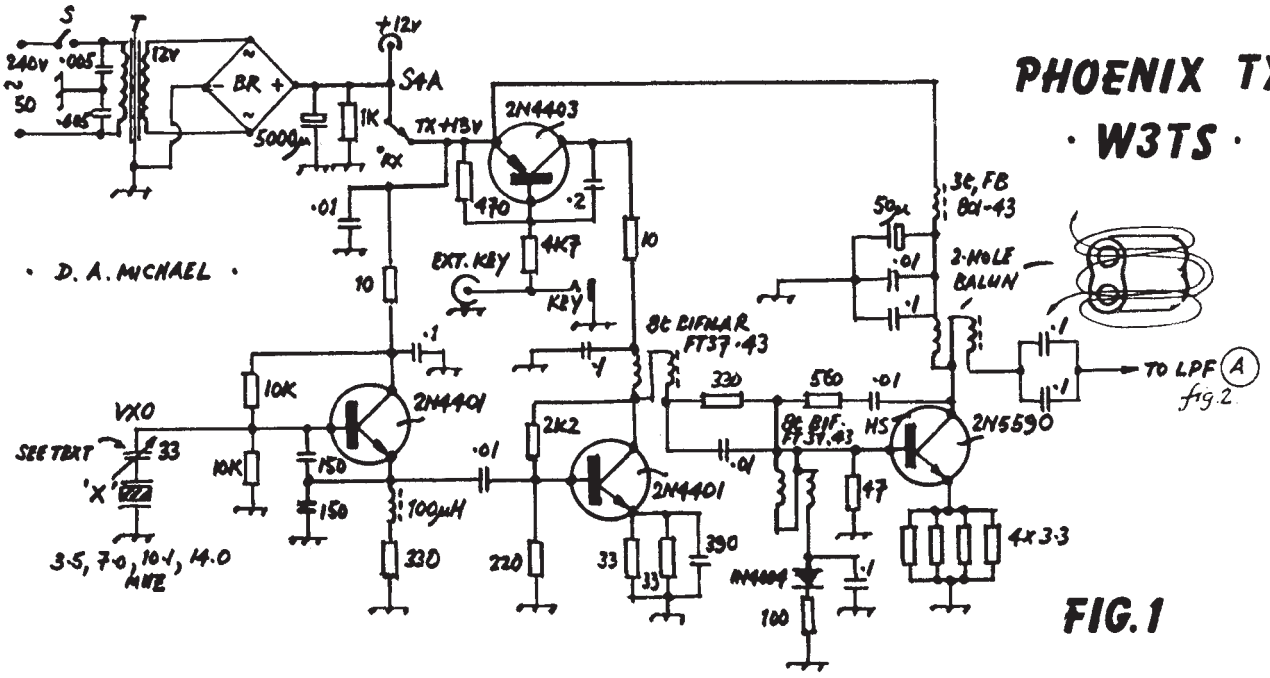


FIG. 1

No, this little transmitter did not arise from my junk box ashes, it was built for a business trip to PHOENIX AZ. When I travel I like to take my SONY 2010 portable receiver along and listen to the ham bands. I thought it would be nice to have a small QRP GALLON (5watt) transmitter to throw into the suitcase to use with the SONY 2010 to make a few QSO's to pass the evenings. Also I have never operated from that far west before and so it was a new challenge to see what could be worked with QRP from a motel room in PHOENIX.

This small rig plus my SONY 2010 have made quite a few QSOs from some interesting vacation places. To complete the portable station, I take a small pair of folding head phones, a few crystals for the QRP frequencies and some wire for an antenna in a small band aid box.

G4RGN INDUCTANCE METER

Douglas Gibson G4RGN Marlow, Westwell Lane, Ashford, Kent, TN26 1JA

This simple inductance meter works by tuning the unknown inductor to resonate with a fixed-frequency oscillator, using a calibrated variable capacitor.

There are 3 decade ranges, reading from 0.3 micro henry to just below 1 millihenry, set by crystals Q1,2,3, which are 10MHz, the square root of 10MHz and 1MHz.

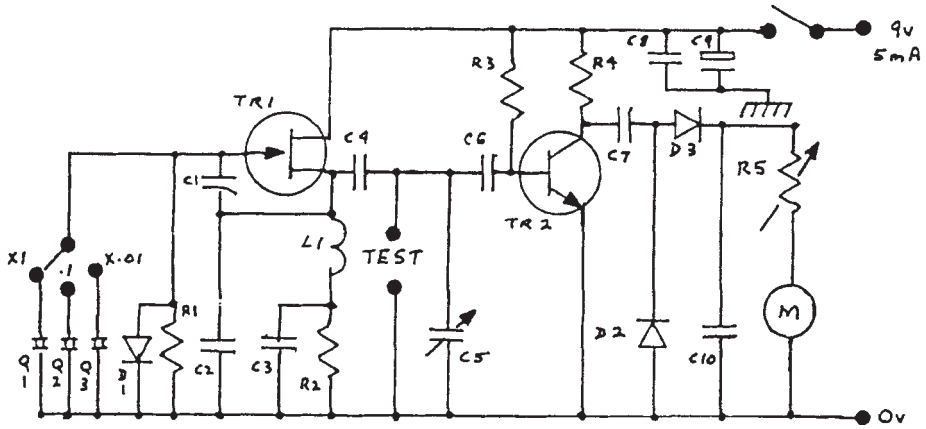
Crystals were used because they were available from the junkbox, and could be reground to the required frequencies.

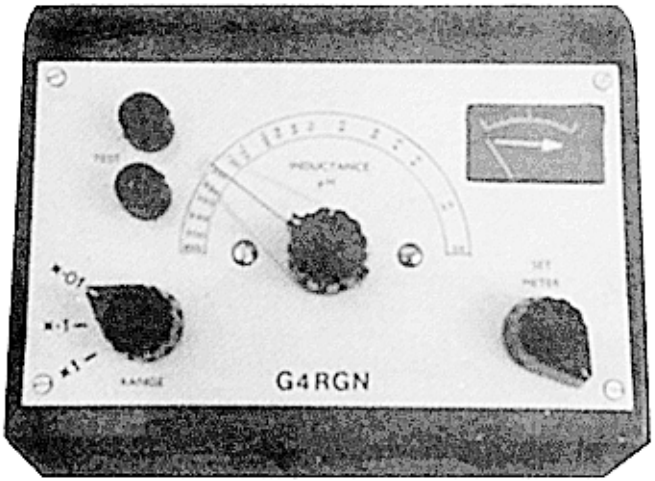
An LC oscillator can be used, but it may suffer from backlash as the circuit undertest 'pulls' the oscillator off frequency at resonance.

The coil under test and the variable capacitor are very loosely coupled in from the oscillators and out to the amplifier/rectifier, to impose minimal damping, so that the indication is very sharp with coils of reasonable Q.

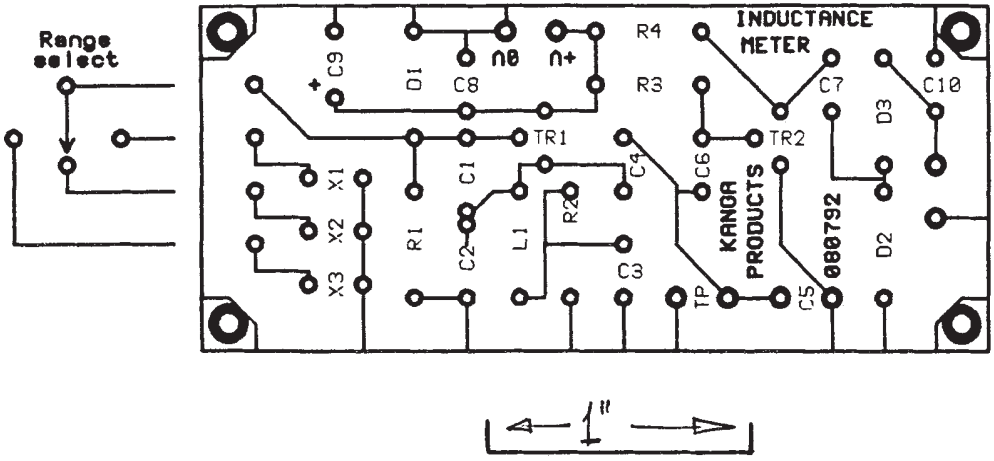
Calibration was done indirectly with the aid of the capacitance Meter [SPRAT 52] and the accompanying Table.

The 250uA meter was salvaged from a junk tape recorder, and the front panel is copper clad PCB material with the copper side inside used as the groundplane for the 'ugly' construction.





INDUCTANCE METER



Component Values

C1,2: 100pF Poly
C3,8,10: 0.1uF Disc
C4,6: 3.3pF Min. Cer
C5: 400+400pF variable
C7: 0.01 Disc
C9: 47uF Min. Elect.

R1: 220K
R2: 1K
R3: 1M
R4: 560
R5: 10K Pot + Switch

L1: 1mH Min Choke

TR1: TIS88A RF FET
TR2: BC109
D1: 1N4148
D2,3: OA91

Q1: 1MHz Xtal
Q2: 3.162MHz Xtal
Q3: 10MHz Xtal

Cap pF	Ind uH
30	844
70	361
110	230
150	168
190	133
230	110
270	93
310	81
350	72
390	64
430	58
470	53
510	49
550	46
590	42
630	40
670	37
710	35
750	33
790	32

INDUCTANCE METER KIT : Kanga will be supplying a kit for this project for £14.95
The kit excludes the 400+400 Cap and Meter. Currently they are awaiting Crystal supplies

THE SUPER TEE ANTENNA TUNER

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POB 593 - Church Lane, Halifax, PA 17032-0593, U.S.A.

I have been trying antenna tuners for most of my ham career and now finally settled down to this one circuit. It is based on a tuner by DJ2LR that was written up in QST December 1974 page 48 and ELECTRONIC DESIGN 19 September 13, 1975 page 96.

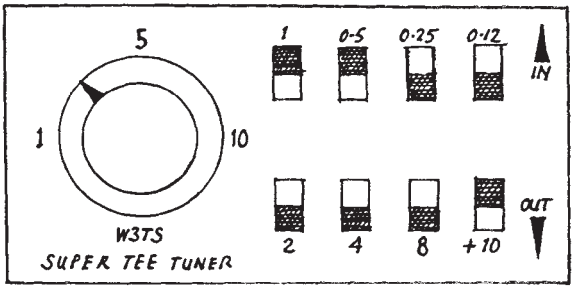
I made a few changes to improve it for low power use. I use 7 slide switches (I think toggle switches would work just as good at QRP) and 7 separate inductors to get a large range of inductance while keeping a high Q. By using separate inductors that are shorted out when not needed you do not get the "shorted turn" effect that lowers the Q. This then keeps the tuner losses very low, which is important when you are using only a few milliwatts. It also is much easier to reset the tuner under contest operating conditions, (I used a roller inductor on a prototype, but it takes a long time to crank from low inductance to a high inductance.) I may build another using relays and diode programming from push button band switches for contest use.

Another modification that I made was to float the low side of the circuit above ground. This way you can tune balanced lines with it. I have checked this for balance with a simple feed line current sampler using two ferrite cores and the tuner does not appear to cause any imbalance. When you want to tune coax or random wire antennas, all you have to do is jumper the low side to ground.

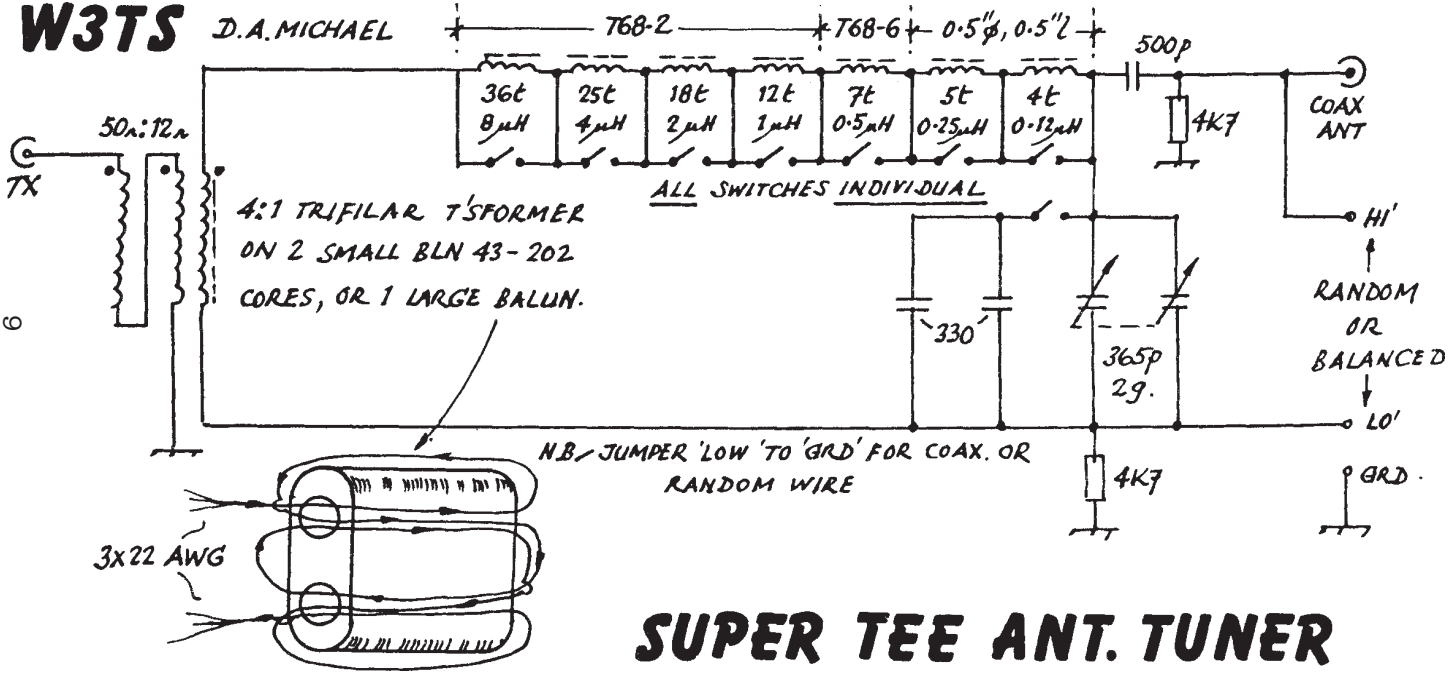
Because the low side of the tuner is floating above ground you must insulate the dual 365 pF tuning capacitor from the chassis. I have used two methods to do this. One way is to use double sided "picture Mounting" foam tape. At QRP power levels up to 50 Watts this works fine. The other way is to mount the capacitor to a piece of plastic and then mount the plastic to the chassis. Be sure to use a large plastic tuning knob with a deeply set screw so you don't get an RF burn when tuning balanced lines with the low side of the tuner floating. Of course a flexible insulated shaft coupler could be used.

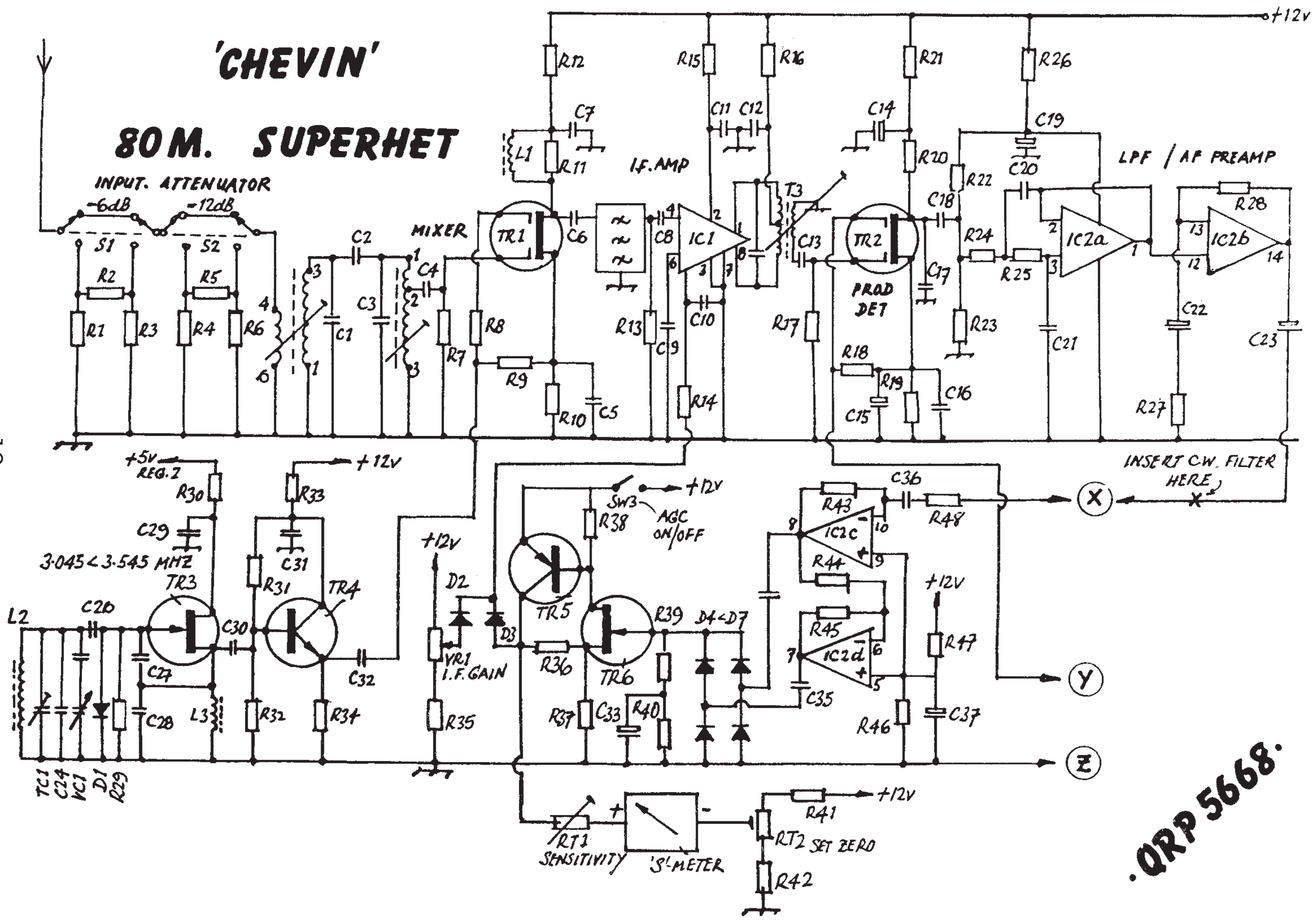
This tuner always operates as a low pass circuit and does not have any false match modes that present high circulating current. To adjust the tuner, I set the dual 365 capacitor fully meshed but don't switch in the extra 660 pF of capacitance. Then I start with the lowest inductance and work up till I hear a noise peak in RX. Then I supply TX power and adjust L and C for the best match. Some times the best match is had when all the L is switched out.

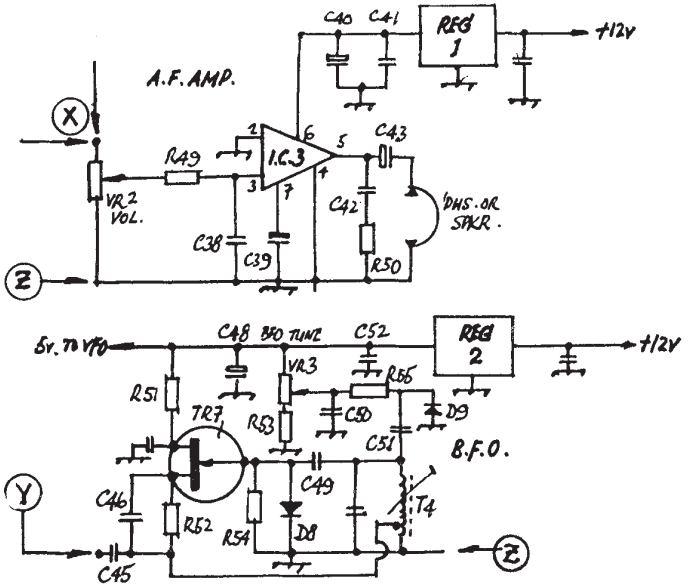
For Field Day the last few years two of these tuners have been used to match all types of antennas. So far, nothing has been found that cannot be matched. Of course the longer and higher your antenna the better it will work, but if you only have a low short wire this tuner should get the most power into it.



FRONT VIEW OF TUNER
COIL SET FOR 1.5uH : CAP SET FOR 14 [Log Scale Ref. Only]
' +10 ' is extra 660pF Capacitor Switch


W3TS
D.A. MICHAEL
T68-2
T68-6
0·5"ø, 0·5"l
500p
36t 8μH
25t 4μH
18t 2μH
12t 1μH
7t 0·5μH
5t 0·25μH
4t 0·12μH
4K7
COAX ANT
50Ω:12Ω
TX
ALL SWITCHES INDIVIDUAL
4:1 TRIFILAR T'SFORMER ON 2 SMALL BLN 43-202 CORES, OR 1 LARGE BALUN.
HI'
RANDOM OR BALANCED
330'
365p 2g.
LO'
NB/ JUMPER 'LOW' TO 'GRD' FOR COAX. OR RANDOM WIRE
4K7
GRD.
3x22 AWG
SUPER TEE ANT. TUNER


'CHEVIN'
80M. SUPERHET
INPUT. ATTENUATOR
-6dB
-12dB
S1
S2
R1 R2 R3 R4 R5 R6
MIXER
C1 C2 C3 C4
R7 R8 R9 R10 R11 R12
L1
TR1
C5 C6 C7
I.F. AMP
C8 C9 C10 C11 C12 C13 C14
IC1
R13 R14 R15 R16 R17
T3
PROD DET
TR2
R18 R19 R20 R21
C15 C16 C17 C18
LPF / AF PREAMP
R22 R23 R24 R25 R26 R27 R28
C19 C20 C21 C22 C23
IC2a IC2b
+12v
INSERT C.W. FILTER HERE
+5V REG. 2
R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40
C29 C30 C31 C32 C33
3·045 < 3·545 MHZ
TR3 TR4 TR5 TR6
L2 L3
C26 C27 C28
TC1 C24 VC1 D1 R29
D2 D3
VR1 I.F. GAIN
SW3 AGC ON/OFF
D4 < D7
IC2c IC2d
R43 R44 R45 R46 R47 R48
C35 C36 C37
X
Y
Z
RT1 SENSITIVITY
'S'-METER
RT2 SET ZERO
R41 R42
·QRP 5668·



T1,2 TOKO KANK3333R
T3 TOKO YHES17105R2
T4 TOKO YHCS11100AC
L1 1mH RFC
L2 30 turns 30 swg on T50-6
L3 470uH RFC

F1 455KHz SSB Filter MURATA CFM455J1 [See Notes]
M1 200uA [ex-tape etc.]
SW1,2 DPDT Min
SW3 SPST Min

TR1,3 40673,3N201 etc
TR3,6,7, BF244, 2N3819 etc
TR4 BC182, BC108 etc
TR5 BC212, BCY71 etc
D1-8 1N4148, 1N914 etc
D9 1N4001
IC1 MC1350
IC2 TLO74
IC3 LM386
REG1 78LO8
REG2 78LO5

COMPONENTS LIST

R1.3 150
R2 39
R4,6 82
R5 91 [2X180]
R7,22,23 47K
R8,30,51 56
R9,14,18,46 47,48,49 22K
R10,19,52 220
R11,13 2K2
R12,15,16,21 26,33 100
R17,32,38,44 45,53 10K
R20,27,37,29 1K
R24,25 12K
R28 3K3
R29,54,55 100K
R31 56K
R34 470K
R35 5K6
R36 SEE NOTES
R40 1M
R41,42 1K5
R43 120K
R50 10
RT1 100K preset
RT2 4K7 preset
VR1 10K lin
VR2 10K log
VR3 47K lin

C1,3 33p cer
C2 4p7 cer
C4,13 470p cer
C5,10,16,17 46,50 10n cer
C6,8,38 4n7 cer
C7,9,11,12,29,31 41,44,52,53 100n cer
C14,40 47u elec
C15,39 2u2 elec
C18,34,35,36 42 100n mylar
C19,43 100u elec
C20 10n mylar
C21 3n3 mylar
C22,23,37 1u elec
C24 See Notes
C25 See Notes
C26 470p Poly
C27,28 1n Poly
C30 47p cer
C32,45 1n cer
C33 4u7 tant
C48 10u elec
C49 22p Poly
C51 3n3 Poly
TC1 60p Foil Trim
VC1 See Notes

THE CHEVIN 80m SUPERHET RECEIVER

David Limmer 29 Orchard Street, Otley, Leeds, LS21 1JU

The Chevin is a local beauty spot, before anyone asks - was born out of a desire to make a receiver of rather better specifications that the normal DC units (as much as I revere them) which would be relatively simple, use standard components and yet offer both good performance and a few "features" such as AGC, 'S' meter, etc.

I was particularly interested in G8PG's review of the Malsor kit Rx, as the designs, by coincidence, seem to run parallel in several respects. however, I claim no originality for the "Chevin", acknowledging as ever "Solid State Design for the Radio Amateur" for both inspiration and chunks of the circuitry. All building blacks, however have been thoroughly tested and optimised for good performance.

The circuit should in fact be self-explanatory, and I have enclosed separate construction/operating notes. Other refinements can easily be added, such as a CW filter (at the point indicated on the main diagram, in the AGC loop) and muting for the licensed fraternity. Again, "Solid State Design" will give the how and why.

Generally, performance is very pleasing. Stability is good, selectivity more than adequate, sensitivity excellent, and I have noticed no over load problems. Best DX so far on 80m has been 5N0 using a 40ft long wire via an L-match.

Other refinements? - well, the "Chevin II" is already under way, using a much cheaper HF Xtal filter (a la Malsor) and a better, balanced, MOSFET mixer. I am also investigating simple, matching HF converters, and if an interest is generated by the basic design, I'll be glad to write these up for a future article or two.

Constructional/Operating notes

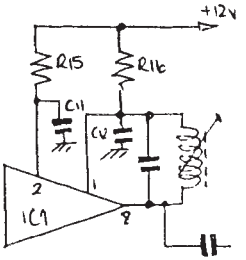
The design is for 80m (3.5 to 4.0 MHz to allow use of HF converters), although constructors should be able to modify for 160m without difficulty. 40m may also be possible, but should be regarded as the upper limit due to the low IF.

Filter

The specified filter (Murata (FM45S J1) is the most expensive single component, but has a respectable performance for such a compact unit. (2.68kHz @ 6/50db) Other 455KHz units could be tried with mods to the PCB. An alternative tried was the cheap CFU455 1T (KHz) which was surprisingly good.

IFTS

T3 was chosen as it offers a centre-tapped primary for IC1 and a high-z sec. for TR2. However, a scrap IFT from a "Tranny" can be used as follows:-



T4 was also called from a scrap "tranny" and was a final (black) type.

Semiconductors

Uncritical - any of the common MOSFETS and FETS can be used for TR1, 2, 3, 6 and 7, and similarly, any of the common bipolars for TR4 and 5. Diode types are equally uncritical. IC2 was chosen for low noise, but LM324 will work well. IC3 was an LM386N1 as this was to hand, and was run from 8v as this particular type of 386 isn't happy with 12v. If the LM386N4 is available, Reg. I can be omitted.

AGC circuitry

This a little more complex than is usual in RXs of this type, using a phase splitter and full wave diode bridge, but is worth the effort. Very strong signals will cause overshoot, in which case VR1 should be backed off and for attenuation switched in. Delay time can be modified by changing C33/R40. Use a tantalum cap. for C33. R36 should be chosen to give 5v at TR5 collector. (between 820R and 2k2 approx.)

VFO
Runs on low side of signal, as a far spurii were noted when running on high side (3.955 to 4.455MHz) the choice is yours! In the prototype, C24 was 180pf and C25 470pf with a 350pf air-spaced variable in series to cover the full 500khz. Use good quality polystyrenes or prepare to drift! Mount L2 vertically with araldite.

PCB [*A Photocopy of the author's PCB layout is available from G3RJV send SAE marked 'Chevin'*]
Many constructors prefer to build in modular fashion, but the Rx can easily be made to fit a single 120 x 95mm PCB without crowding. A suggested layout is available from G3RJV. Double-sided board was used in the prototype because I happened to have a piece of the right size, but single-sided should be fine.

Alignment
The VFO was set using a general coverage receiver. With the AGC off, T4 was adjusted to zero beat with VR3 approx at mid-travel. T3 is simply peaked for maximum noise (keep the AGC off) and T1/T2 peaked at mid-band. The two S meter pots are slightly interdependant, but easy enough to set in practice. I used a simple 1 - 10 linear scale simply to show comparative signal strength. (I doubt if it's worth the effort of calibrating in pukka S units!)

A SIMPLE RF DETECTOR

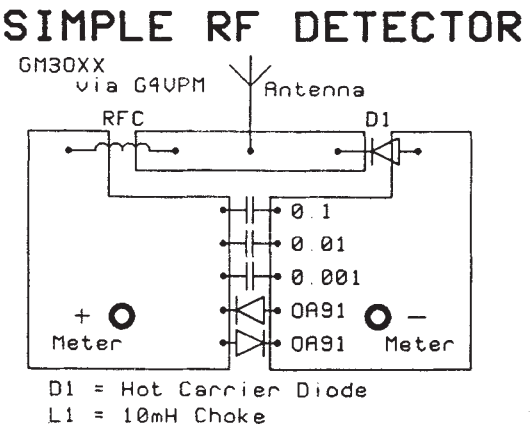
Andy Stafford G4VPM - from an idea by George Burt GM3OXX

From TARS TALK : Magazine of the Torbay Amateur Radio Society

It seems that every time I visit the shack of George GM3OXX I come back with details of, or the idea for, an interesting project. When I was up there at the end of January, I came away with both the details of, and an example of, a nice little RF detector.

The beauty of this project is that it is totally self-contained, doesn't need any power and is quire compact (depending on the meter used!) Thus you can take it anywhere including out on field days and such the like and it's quite a useful bit of test gear. I often use an RF probe for aligning oscillators and checking out QRP transmitters. Usually, if there's RF there, its working!

The circuit and construction is very simple. First, find yourself a meter. The lower the current rating of the meter, the more sensitive it will be (50 microamps FSD is nice, 100 is still good). The PCB is fitted to the terminals on the back of the meter so plan to make it a convenient size and shape to fit there. If the meter has got 'bolt type' terminals rather than solder type, the board can be fitted very easily and securely. In the diagram that type of terminal is used.



ARGONAUT 509 MODIFICATIONS

B.C. Weaver WU2J & F/WU2J
430 Plant Ave NE, Palm Bay, Florida 32907, U.S.A.

When I first became an ARCI QRP member in 1964, most amateurs were using a valve for a CW TX and mostly regenerative receivers. I even managed a 6AQ5 for a final and another for a modulator in an AM TX. SSB was not yet universal and even voice was just not popular with QRPers. Almost 30 years later and QRP is still mostly simple CW units with the exception of the ready-build Argonaut which brought many QRPers to SSB (or many amateurs to QRP).

After getting my first Argo 509 (only a few years ago) I searched publications for any modifications ever written on the unit, even telephoning QST. Result; nil. I liked my unit but wanted it to be able to perform as my main transceiver for station as well as travel to include good SSB. When I turned the mic gain up, others told me I was FMing or distorted or whatever. It was impossible to get the same power on SSB as on CW because doing so meant overdriving the final amplifier. I still hear many talk of the Argo 509 "receiver" being used with a higher power transmitter. Perhaps we've lost many possible QRPers because they prefer SSB but couldn't find an answer in the ready made Argo 509?

Recently, I've become a semi-collector of Argos and this has permitted me to see the differences the factory (TenTec) made in each with time as well as comparing unit-to-unit performance. Some of the modifications I've , made on units have been done by others, i.e. change antenna connector, "+12 volt In" connector etc. Putting 3.5mm phone jack on the front panel, I fancy. A 27 ohm resistor across the audio amp output to the speaker will save one replacing the amp if the speaker wire breaks off in servicing the unit.

Initially, I found it wasn't a simple process to install an 8 pole crystal filter (2.4 KHz BW) in place of the existing 4 pole unit on the sideband generator board. You see, the centre frequency for the 9 MHz filter is 9,001,500 (approx) on the Argo. and the original 9 MHz crystal cannot be pulled enough for an SB-N setting if a 9 MHz filter is dropped in the Argo.
Specifically, the 509's crystal oscillator is set to generate 9,003500, 9000600 and 8999850 Hz for SB-R, CW, & SB-N. Upper & reverse sideband freq. are at the 15 dB down points on the 509's 4 pole filter and set 3650 Hz apart. I had purchased some 2.4, 2.1, and 1.8 KHz (6dB) crystal filters with 8 sections from Int'l Radio & Computer (Fox Tango) in Ft. Pierce, Florida. These were supplied to be used in a couple FT-7s I had but with the Argo idea also in mind.

By modifying the board a bit a 2.4 KHz filter was recently installed where the typical 4 pole filter was located. However, the 9 MHz osc. crystal was replaced with a crystal of 8999000 Hz. The new frequencies found appropriate for SB-R, CW, & SB-N are now set for 9001400, 8999350 and 8998600 respectively with excellent audio reports and less QRM on receive. I plan to install an even narrower filter in another Argo 509 in the future with most likely closer freq.

Of course, the transformers T-1 on the SSB Generator board and IF Board plus L1 on the TX-RXMixer board must now be peaked for 9 MHz centre frequency. In one solder 509 I acquired, some electrolytic capacitors were leaky on the IF board so they were replaced. I check them by charging them with 13-14 volts and measuring their charged voltage a minute or so later with a DMM. A few MPS 8097s were low in gain and replaced with CIL 108s. (The "S" meter didn't appear to have the gain or high enough readings on signals). It is important also that the regulator IC on the Control Board put out slightly over 8 volts (8.1-8.15) and not 7 or so volts. Replace the IC if this be the case.

A modification I particularly like and which changes completely the SSB performance of the Argo 509 TX is the installation of MRF 476s in the Final Amplifier. I've performed this mod on a few units and can now do all in about 3 hrs. It also involves changes to the SSB Generator Board's Audio Amplifiers. (2SC2020's may also be used instead of MRF 476s). Many times stations worked have commented on

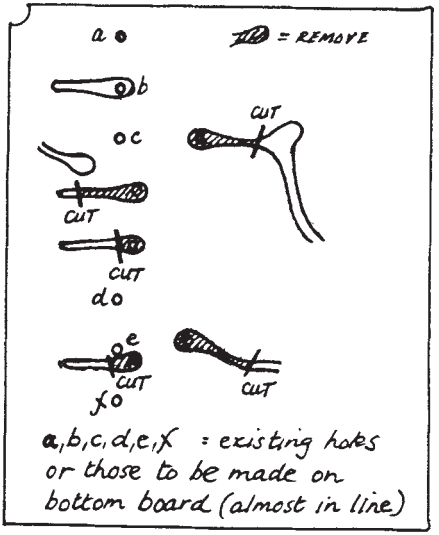
the excellent quality of my audio (even without the 8 pole crystal filter). This mod will yield undistorted audio of 7 watts (detected across 50 ohms with DMM) on 10 meters and near 10 watts on all other bands! Typically most stock units run 2.5 watts with a two-tone test on 10 meters (SSB) if a unit is still in good factory condition. This mod is not complicated except for some mechanical creativeness in heat sinking the two MRF 476s. And, with the addition of a 10 dB home-brew power attenuator you can switch directly to 700 - 900 mW output or turn down your mic. gain drive. Here are some notes :

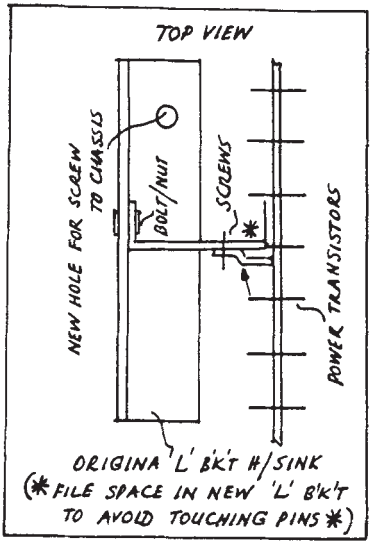
1. Remove screw mounted in chassis that hold heat sink for Final Board.
2. Gently pry board out from pin socket with screwdriver tilting board upward so heat sink passes over screw on floor of chassis.
3. Remove 100 ohm resistor on bottom of board. Not using this resistor increases the quiescent current of the MRF 476s to near 20 ma.
4. Using solder wick, absorb solder on bottom of board from around the three leads of each power transistor, then remove both transistors.
5. Remove 470 ohm resistor from top of board. If resistor is good, keep as we will resolder it underneath board later.
6. Absorb solder that holds the ends of the RFC's on the ferrite BEADS (RFC1 & RFC2 on schematic). Then using their existing leads, push them back (on top of board) away from the place where power transistors existed. This is to gain space for the new power transistors. Hence, extend their leads as much as possible and resolder to their existing holes.
7. The top of the board should now have sufficient space for the new transistors. (Note: T3 and T4 TOROIDS on top should stand up-on-ends parallel to each other and any excess silicon used to hold them and which protrudes to centre of board can be carefully cut away. This may or may not be necessary).
8. Using a razor blade or sharp knife, cut away portions printed circuit in order to accommodate a wiring pattern for the MRF 476s. New holes will have to be drilled.
9. Resolder 470 resistor to PC lines on bottom of board.

Here's my basic pattern (yours may be different) which has worked well and fast on a few occasions. (As written in SPRAT by G3RJV: very much not to scale!)

I found it easier to drill 3 NEW holes for each transistor's leads, with one hole for each transistor winding up closer to the outside edge of the board on each side! One (or two) of the vertical mounting plug-in pins on the TOP of the board were cut down flush with the board to avoid contact. (the jumpered pins).

I've used different heat sink configurations, both required a new chassis hole for a screw (removed the TX-RX Mixer board on top before drilling). Perhaps the simplest consists of using the existing piece of heat sink aluminium (with old screws and heat caps removed) in an "about face" sitting and adding a short new "L" piece of aluminium from collectors. Isolate the collectors with plastic wafers used in power transistor mountings.

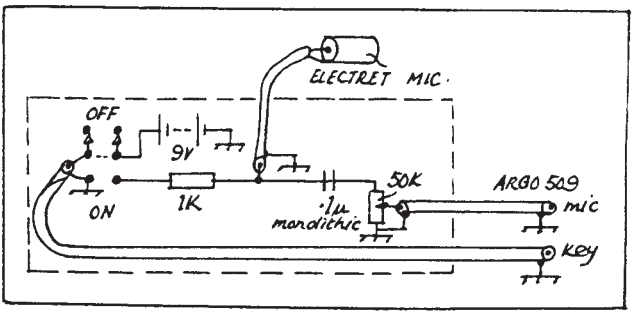


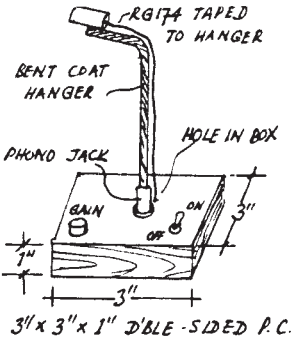


When finished, you'll be able to notice a doubling of power (plus or minus depending on band) in the CW modes immediately. However, for SSB, you'll need to change parts on SSB Generator Board for full impact of this great mod. (I guess this QRO mod will panic G3RJV, but we've never heard him SSB and we're trying only to obtain SSB performance equivalent to what already existed on CW!

Changes on SSB Generator board are as follows:
Change: C11 to 470 ufd electrolytic, C19 to .47 ufd (tantalum), C12 to 2.2 ufd (tant), C14 to 4.7 ufd (tant), C17 to 2.2 ufd (tant), R22 to 1.5K ohm

Since I never acquired a Ten-Tec mike which I believe is a high impedance type, I've built my own lower impedance unit (hence, the audio mods) using an electret from Tandy. Schematic as follows:





For a "S" meter movement speed more to my liking, I changed C22 on the IF Board to 100 ufd electrolytic and C21 to a 1 ufd tantalum (the original 1 ufd electrolytic's tolerance was too broad making it closer to 1.5 ufd). You may wish to experiment with slightly smaller values for faster CW response. I find it necessary to remove the front panel to get his board out of unit, but I wished a small 3.5 mm earphone jack there anyway and dial lights needed replacement!

Certainly if the CW enthusiast can have his multitude of HW mods, the sideband QRPer should have mods for the history making Argo 509. Afterall, CW technical discussions with friends are not always easy. Hope to hear you talkin' on 20, 15, or 10 meters!

CORRECTION : THE NAT TRANSMITTER : SPRAT 71

Several members have written to point out the circuit diagram error. The power supply to the VN66 devices goes to a centre tap on the coil L1 - not L2 [a nasty short to ground!]. Also there is a dot placed on the junction of the gate of the bottom VN66 and the source-ground lead : there is no connection here.

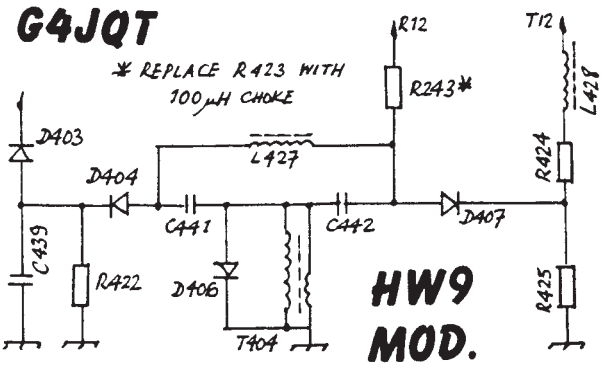
NICKY TRF IMPROVEMENTS : Doug Gibson G4RGN

With the circuit as designed TR4 is bottomed, if the 22K in its base is raised to 470K and shunted with a 0.01uF capacitor, the overall gain is increased enormously. Also the coupling capacitor to the volume control at point B should be dropped right down to 10nF, and the volume control raised to 100K. This modification raises the gain by a further 3X and improves the audio quality.
The effect of this large increase in audio gain is to enable a drastic reduction to be made in the RF input to the detector, by using a VERY small series aerial coupling variable capacitor. This avoids the distortion on strong ssb signals which 'pull' the oscillator.
Another small modification is to use one of the little 6x6mm 'pignose' ferrites for T1. Wind with 3 & 15 turns of 0.15mm, they work excellently from 1.8 to 20MHz.

IMPROVING THE OVERLOAD CHARACTERISTICS OF THE HW9

Ian Liston-Smith G4JQT 48 Swansea Road, Reading, FG1 8HA

I was interested to see another modification for the Heathkit HW9. I have one of these little rigs, but like so much of Heathkit's amateur radio equipment, it needs all kinds of minor modifications which could so easily have been done at the design stage at little extra cost... However, I have done one mod to mine which really has made a very significant improvement to the receiver performance, the original performance being generously described as "adequate"!



A friend (G0OIW) and I both completed construction of our HW9s at about the same time. I found the receiver section of mine to suffer so badly from overloading that I compared it to that of G0OIW. The lever of intermodulation distortion was EXACTLY the same on both rigs - the same spurious signals occurring at the same place on the dial. So it was unlikely that they both had the same fault.

An attenuator was first tried, along the lines of those from DL7GK shown in "Sprat"70. Solid state amateur type receivers usually benefit from the employment of attenuators, but their use I feel, tends to indicate that the designers have admitted defeat when it comes to strong signal handling!
Unfortunately I wanted to place this control on the back panel, but this necessitated the use of co-ax. Although it cut down the overloading, the capacitance thus introduced weakened the signals on the higher bands too much, so that approach was abandoned. However, DL7GK's method of putting the control very close to where it's needed on the board would overcome this effect.

I decided to investigate the diode switching. Putting ordinary diodes in a signal path as Heathkit did is just inviting trouble if care is not taken over their biasing! So I increased the forward current through the relevant diodes and - HEY PRESTO! WHAT AN IMPROVEMENT!

The way I did this was to simply replace R423 (2.2k) with a 100 micro Henry choke. The relevant area is located centre left of T/R Board. (An Axial type choke of the kind Heathkit use will fit perfectly where R423 was.) Doing this still keeps the RF out of the Tx/Rx switching circuits, but increases the forward current through D403, D404, and D407. The current is kept to a safe value by R425 for D407, and R401 for D403 and D404. (See diagram.)

Before carrying out this mod, I scoured the pages of "Sprat". "QST", "Practical Wireless" etc. for a remedy to the overloading problem of this transceiver. Although I have built up a collection of articles and mods for the HW9, only the symptoms of this problem seem to have been tackled, which is a shame since the cure (at least in my case) was so simple!
I suspect that the apparent poor selectivity reported by many users of the rig may in fact be due to the extra noise and "phantom signals" generated by the inadequate dynamic range. Replacing the filter and/or incorporating an attenuator with the above modification should turn the receiver from a barely adequate one into a pretty good one.

Unfortunately G0OIW sold his HW9 before doing this mod, as it would have been very interesting to see if it had the same effect on his rig. Presumably it would have!

A POLYPHASE RECEIVER

John R. Hey G3TDZ
8 Armley Grange Crescent, Leeds, LS12 3QL

Since the phasing SSB exciter in Sprat 66 and the phasing receiver in Sprat 71, I have been asked both on air and by mail whether I had considered the polyphase method. An exciter was described in Rad Comm way back in Sept. 1976, though using older circuitry than might be employed today. For scientific completeness, a polyphase receiver has been built by modifying an existing phasing receiver; most of the work having already been done, and it works well.

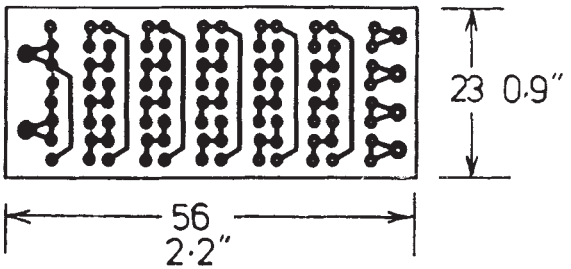
Built on a piggyback board and consisting of six sections, the polyphase network replaces the phasing components. All 24 capacitors are 10n polyester or polypropylene potted types with set of four resistors in the values 6k8, 10k, 15k, 22k, 33k, and 47k completing the network. Miniature 16T types make a neat construction though keen types might like to try a surface mount board which would easily fit into the existing space.

U3 and U4 provide drive as before; however equal amplitude p-p signals are required this time; R55, R56 and R59, R60 are changed to 8k2 and 1k8 so that they may equal R54 and R58.

Pin 1 and pin 7 of U3 should feed the 0 deg and 180 deg inputs, and likewise pins 1 and 7 of U4 feed the 90 deg and 270 deg inputs, but via a DP changeover switch, as shown in the diagram. The network's outputs are buffered as before by u5a and u6a. The LSB spigot is not used. The USB spigot is connected to the spigot marked "From USB/LSB switch"; no other changes are necessary.

PLEASE NOTE; There was a slight oops in Fig 3. R27 next to U1 should read R8. C48 is shown wrongly polarised; turn it round. U9 is a twin op-amp, not a 741 as shown. Sorry Chaps.

.....And a polyphase exciter? Watch this space.



SUBSCRIPTION PAYMENTS : PLEASE NOTE

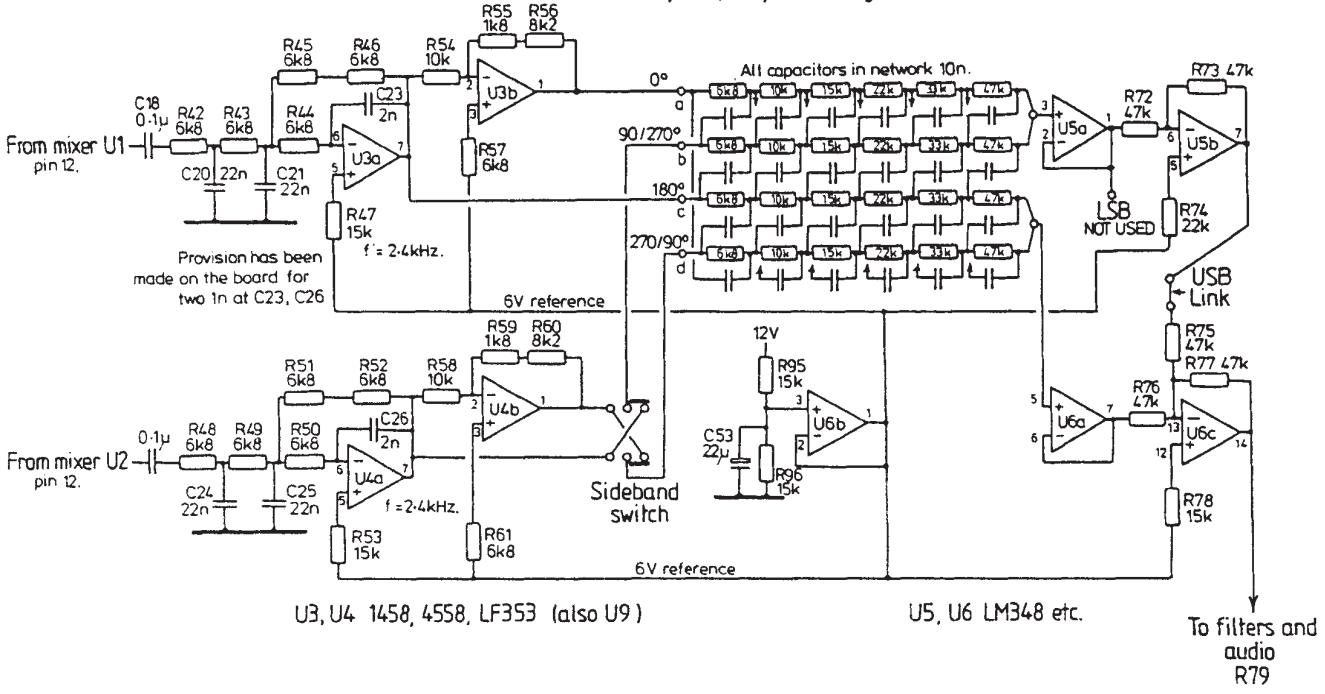
PAYMENTS MUST BE MADE TO G0BXO [SEE MEMBER'S HANDBOOK]
Please make Cheques, Giros etc to "G QRP CLUB" not to individual officers etc.

AGCW - DL WINTER QRP CONTEST

1st Complete Weekend in January : 1500 UTC Saturday to 1500 UTC Sunday
Full Contest Details from G3RJV : SAE marked 'AGCW'

G3TDZ Phasing Receiver modified for Polyphase network.

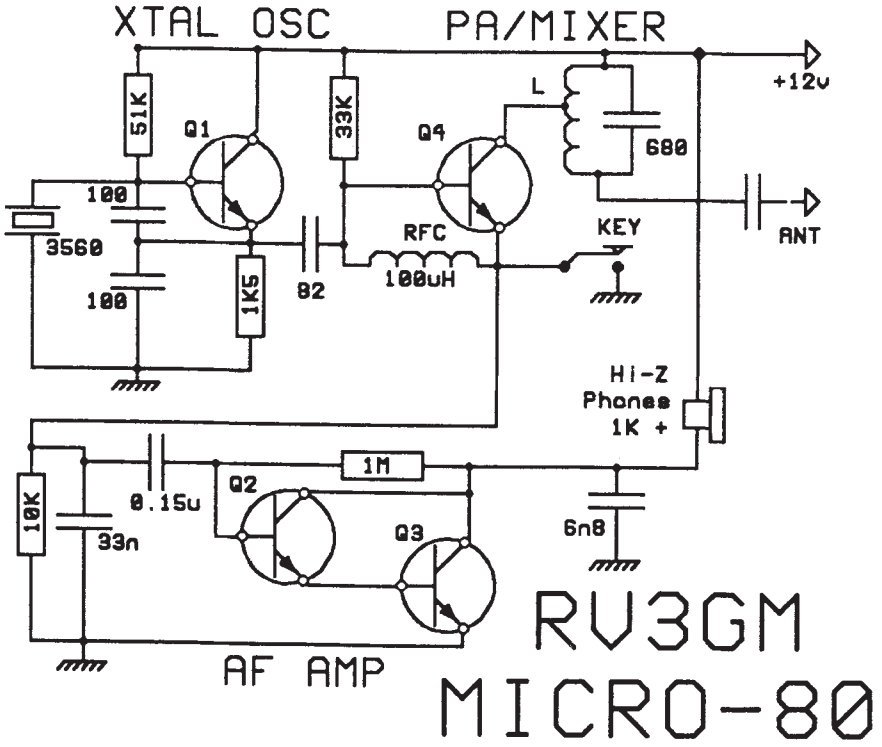
R62 to R71 and C27 to C30 are omitted. R55, R56, R59, R60 changed in value.



THE MICRO-80 MINI-TRANSCEIVER

Oleg Borodin RV3GM P.O. Box 229, Lipetsk 43, U.S.S.R.

Oleg offers members the circuit of his miniature MICRO-80 Transceiver which is produced in kit form by his small company Radio-S. The circuit is a simple QSK transceiver for 80 metres which could be adapted for other bands by changing crystals and L and C in Q4. The devices quoted are Russian types but any generic transistors should perform in the circuit. Q1-3 would probably work with BC108 and perhaps a 2N3866 for Q4. The rf choke is around 100uH and could be home-wound with 180 turns of 0.1mm wire on a ¼ watt resistor of high value : say over 400K. L is wound with 18 turns [5+13] of 0.33mm wire on an 8mm former with ferrite core. Oleg's suggested layout is used on a PCB 50 x 35mm. He says, 'Is this the world's smallest transceiver ?'



THE HB9ADQ MUTLIBAND DELTA LOOP : A Plea from W5QJM.

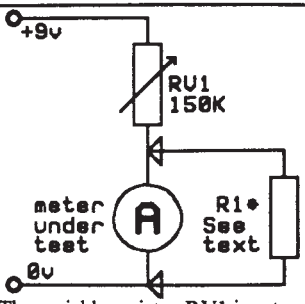
Main Reference. Simple Low Cost Wire Antennas. Orr. 1990 edn. p.60

Several variations of this antenna [all claiming to original] have appeared in abbreviated form in US magazines, none has been complete. In fact the more articles that have run, the less and less is said about the antenna and how it works! No one has cited the source of this design or otherwise offered an explanation of more than is seen in the Orr ref. While there is general agreement about the dimensions of the loop proper, there are variations in feeder length and methods of feeding. It occurs to me this would be a good design for QRPers with limited space. I would like to try it too, but have neither the inclination to re-invent the wheel by duplicating HB9ADQ's work to arrive at the same point as he did. CAN ANYONE HELP?

Fred Bonavita, W5QJM, Box 2764, San Antonio, Texas 78299-2764, USA

FINDING THE INTERNAL RESISTANCE OF UNMARKED METERS

Dave Acrill G0DJA 104 Durkar Lane, Criggleston, Wakefield, WF4 3HY



Cheap meters are available from most Rally Flea markets and salvaged from old equipment. However, many of these meters do not have the value of the internal resistance of the meter marked on them. This makes calculating the necessary series or shunt resistors needed to use the meter in a new circuit.
It is not a good idea to try and measure the internal resistance using an Ohm meter connected across the meter terminals as this will just bounce the needle of the meter against the end stop and possibly damage it or burn out the meter coil.

The internal meter resistance can be found using the circuit in figure 1. The variable resistor RV1 is set to its maximum value and the meter to be tested inserted into the circuit. RV1 is then reduced until the reading on the meter it at half scale. Next various resistors between about 1k ohm and 100 ohms are inserted across the meter terminals. The reading on the meter will probably move. If the reading increases then the shunt resistor is a higher value then the internal resistance of the meter, a reduction in reading means that the shunt resistor is lower than the internal resistance. No movement means that the shunt resistor is the same value as the meter internal resistance.

As an alternative, use a variable resistor instead of swapping resistors for R1. Then remove the variable from the circuit and measure its resistance using an ohm meter.

This system is not absolutely precise as the shunt resistor alters the voltage developed across the meter terminals and this will slightly reduce the meter reading. However, most meters only develop some 300 mV across their terminals at full scale and since the supply voltage is 9v the effect of adding the shunt resister R1 is small.

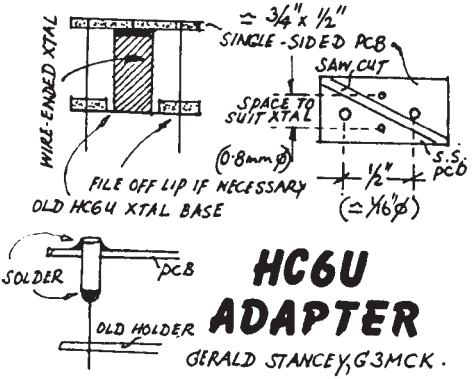
HC6U ADAPTER

Gerald Stancey G3MCK 14 Cherry Orchard, Staines, TW18 2DF

I made this adapter to allow me to use wire ended xtals in HC6/U sockets. The sketch is self explanatory but the following notes may help.

1. Remove the screening can, by unsoldering the base seal, from a useless HC6/U Xtal. Then remove the Xtal.
2. Cut and drill the PCB as shown.
3. Solder in the wire ended Xtal.
4. If necessary file away the lip of the HC6/U to ensure that the legs protrude through the PCB
5. Solder the PCB to the legs of the old HC6/U. If the legs of the old HC6/U are too short I suggest you lengthen them using brass tube from a model shop.

In which case it is probably better not to file away the lip from the base.



G3ROO's CONSTRUCTION COLUMN

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

MULTIBAND LOW PASS FILTER BOARD WITH FORWARD/REVERSE POWER METER

This Sprat covers the Low pass filtering of the transmitted signal, the input filtering of the receiver input signal and the forward and reverse power meter [The Stockton Power Meter : SPRAT 61]

This board is built on double sided board. The top mask is included to help clear the copper from around the correct holes. This is slightly more difficult on this board as some earthing is included on the underside of the board. This has been done because the compactness of the board and relatively large components make it difficult to solder some of the earth connection in the filter area of the board. Solder as many as possible of the earthed components pins on both sides of the board as possible and there should be no problem.

The aerial is fed to the board and fed thorough the power meter circuitry
and then via miniature relays to the low pass filter for the band in use. it is then passed through the aerial relay to the Rx high pass filter to the receiver RF board or, on transmit, to the PA output.

The aerial relay is a two pole unit often seen at rallies, one side used for switching the aerial and the other for earthing the unused signal port, Rx input on transmit and Tx output on receive There is a resistor in series with the coil in case a lower voltage coil is used, for 12 volt coils use 10 ohms, and for other voltages select the resistor value to give the correct voltage drop across the coil. The select relays are single pole types also often found at rallies but beware, as there are two types with different pin outs. The units I use are 211C D005-P, the 5 denotes 5 volt coil. Careful observation of correct units will reveal the coil and it will be noticed that it is connected between the centre pins on each side, on incorrect units the coil is connected on adjacent pins on one side.

ACTUAL SIZE PCB LAYOUT AND A4 OVERLAY : S.A.E. TO G3RJV MARKED 'LPF PCB'

ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS

FOR SALE : B28 [CR100] Good Wkg order £40, Dead AR77 for spares £25, GM3HAT 14MHz Dipole of Delight £8. Tel: Richard G4ICP 0376-84478.

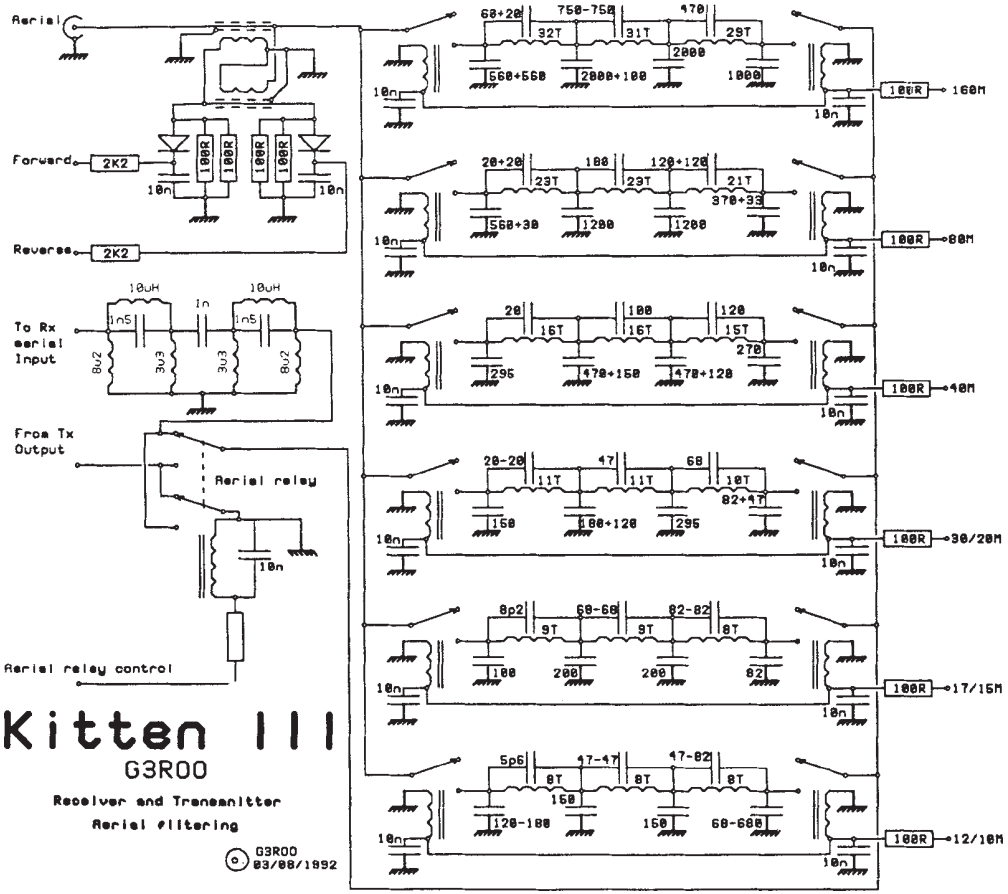
FOR SALE: HW9 Transceiver, Rx OK but Tx unstable despite mods, offers, International Radio Inc. [USA] CW crystal filter type 88H400C, 400Hz, 8 pole, suitable for HW9, TS430, TS820 etc [8830.7KHz IF], Brand New HW7/8/9/ Mods Book [1991 ed.]. Offers to Noel Cameron, 16 St. Mary's Crescent, Westport, C. Mayo, Eire.

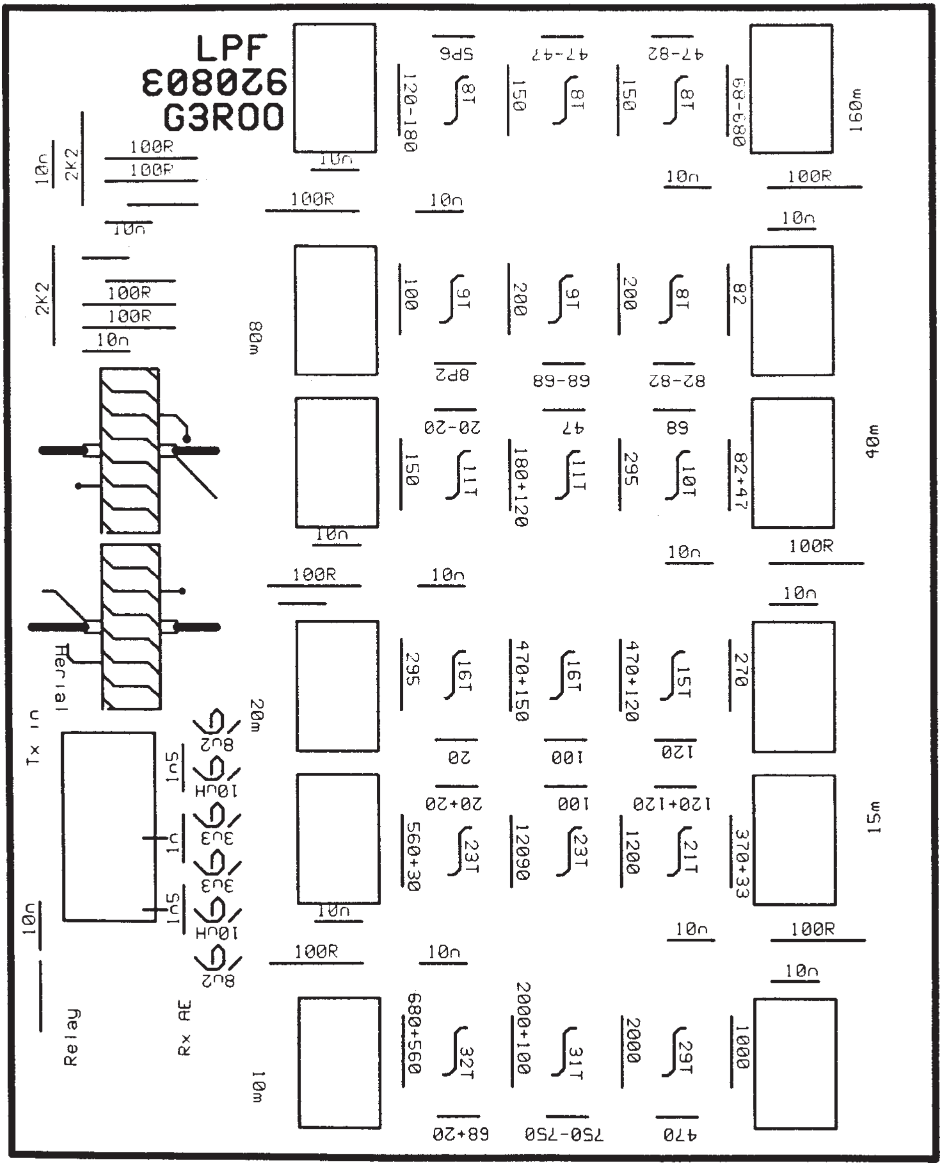
FOR SALE: TEN TEC ARGONAUT II, latest QRP rig with hand mic, £500, HAMMERLUND HQ170 Rx, £50. Stuart, G4MIB, 081-674-6452.

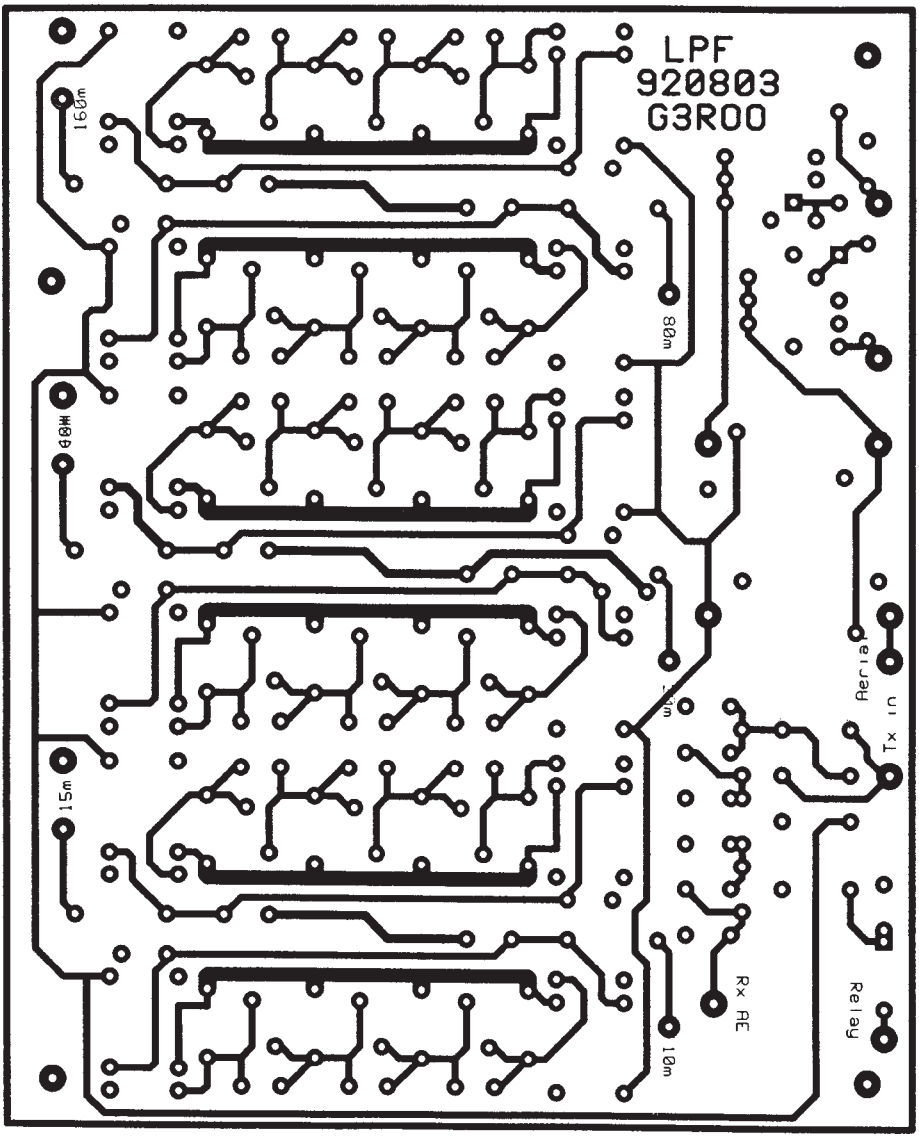
FOR SALE: TRIO JR599 RX Excellent Amateur +2m, 500Hz Filter, AM,FM,SSB,CW £90 ono. YAESU FRG7 RX Good standby RX £70 ono. GM3ZLC Tel: 041-950-3470 [9-5 weekdays]

FOR SALE: MIZUHO QRP TRANSCEIVERS for 20m and 80m, with whip antennas, excellent performers, £130 ea. or £250 the pair. Speaker mic for headhelds, £17, Yaesu FT690 MK2 transceiver, good quality, hardly used, £275, BNOS 10amp PSU [for the linear amplifier], £75, 2m 7/8 mobile whip, 5.2dB gain, £20, White Rose Main Receiver Board plus 40m converter, only needs 3 gang tuning capacitor to complete, £35. Shortwave radio covering 20, 30 & 40m with internal BFO, only £3.
Call David on 081-331-9955.

FOR SALE; HOWES 20m & 80m TRANSVERTERS. 2m 1-3w. in [ideal FT290 etc] 10w max out, all modes [ssb/cw/am/fm] Built, tested and boxed. £30 each or £50 the pair.
Contact Wayne on 081-575-7078. Evenings


Aerial
Forward
2K2
100R
10n
Reverse
2K2
10uH
1nS
1n
To Rx aerial Input
8u2
3u3
From Tx Output
Aerial relay
Aerial relay control
Kitten III
G3ROO
Receiver and Transmitter
Aerial filtering
G3ROO
03/08/1992
68+20
32T
750-750
31T
470
29T
2000
560+560
2000+100
1000
160M
20+20
23T
100
120+120
21T
370+33
560+30
1200
80M
20
16T
15T
270
295
470+150
470+120
40M
20-20
11T
47
68
10T
82+47
150
100+120
30/20M
8p2
9T
68-68
82-82
8T
100
200
17/15M
5p6
47-47
150
120-100
12/10M


LPF
G3ROO
160m
80m
40m
20m
15m
10m
Aerial
Tx in
Relay
Rx AE


LPF
920803
G3ROO
160m
80m
40m
15m
10m
Aerial
Tx in
Rx AE
Relay
3 Inches

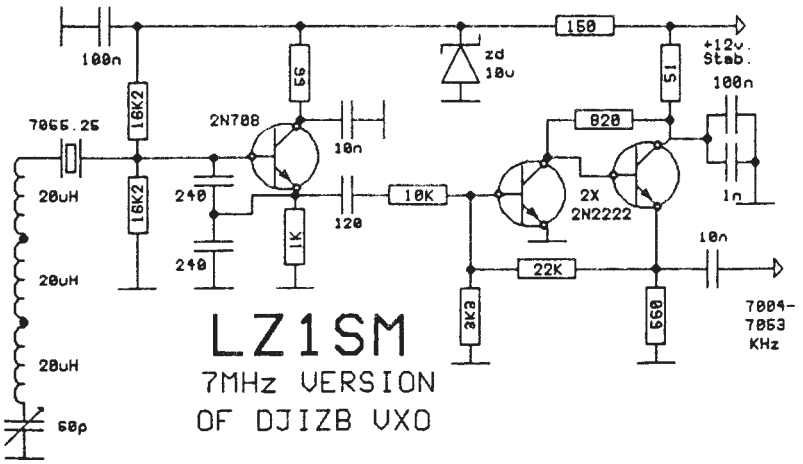
WIDE RANGE VXOs FOR 80, 40, 20 and 10 METRES

Angel Gerasimov LZ1SM
BL.234 WH.2, Mladost - 2, 1799 SOFIA, Bulgaria

Using the ideas suggested by Ha-Jo Brandt, DJ1ZB, (Ref 1), I built and tested discreet element VXOs using crystals on 3543 KHz, 7055, KHz, and 9390 KHz. The most important thing that I achieved was a wide frequency swing combined with good frequency stability. I used a modified Clapp oscillator at a frequency lower than the crystal frequency. On 3543 and 7055 I used commercially made rf chokes. On 9390 KHz I used a home made 3 section choke wound on a ferrite rod with an inductance of 8.2 micro-Henries. It was made in 3 parts, as the Q must be low, with no pronounced resonance (we think Angel means 3, scramble-wound sections Ed).

During my experiments I found that the correlation between the capacitor and the inductor was very important. The capacitor needs to be about 50 t0 60 pF. A variable capacitor of good mechanical construction was used. The required inductance depends upon the frequency (see later).
Ha-Jo used a capacitor of 250p and achieved a frequency swing of 11 KHz on 3597 KHz. I used a capacitor of 60p, and achieved a frequency swing of 30Khz on 3543Khz.
Without compromising frequency stability (the maximum drift of the third harmonic was less than 100 Hz per hour) I achieved the following frequency swings:-
3534 KHz, 3514 - 3544kHz. (L=324 uH, made from 250 + 30 + 30 + 15)
7055 KHz. 7007 - 7050 KHz. (L=60 uH, made from 20 + 20 + 20)
9390 KHz 9320 - 9390 KHz. (L=8.2 + 8. 2 + 8. 2 uH)
It is possible to obtain larger swings, but this degrades stability. There is also some change in stability with frequency. It is best at the high end of the frequency swing. After a 5 minute warm up period typical drift is 5 - 10 Hz per 10 minutes, measured on a laboratory type frequency counter. I recommend this VXO to anyone requiring a wide frequency swing with good stability.

Refs; H. Brandt. "A wide Range 80 Metre VXO". SPRAT No 70. Pages 16 - 17
Editorial note. Different crystals, even of the same type, often exhibit differing frequency swings when used in VXO circuits, so the above results may not be reproduced when other crystals are used.



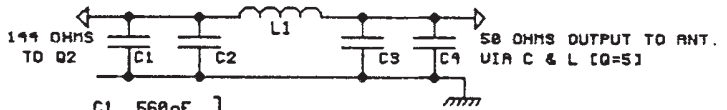
'PEBBLE CRUSHER' MODIFICATIONS

UPDATES TO THE PEBBLE CRUSHER TRANSMITTER BY W1FB IN SPRAT 66

TONY LYMER GM0DHD
16 Gerson Park, Greendykes Road, Broxburn, West Lothian, EH52 6PL

I was attracted to the Pebble Crusher transmitter by Doug DeMaw's comments about signal quality, and chirp etc., but when I completed it, I found that I could only get about 200mW output. I traced the problem to the output matching circuit and analysed the circuit given. Unfortunately, the component values did not agree with the transformation from 144 ohms to 50 ohms with a loaded Q of 5. The recalculated values are shown in Fig.1. to the nearest prefered values. L1 was wound with 15 turns on a Micrometers T50-6 core. I found that the inductance range can vary by a factor of 2:1 between closewound turns and turns widely spaced on the core. The latter gives the correct impedance, according to the manufacturer's data. The 144 ohm, Q=5 network gave 0.74 watts output with 14MHz at -30dB, and 21MHz at -44 dB. I had a little trouble adjusting the network, as the correct loading does not occur at the point of maximum output when adjusting the coil. I set it up using a network analyzer.

FIG.1. NEW OUTPUT NETWORK FOR PEBBLE CRUSHER



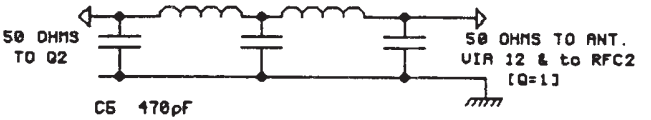
C1 560pF] Replace C10
C2 220pF]

C3 270pF] Replace C11
C4 1000pF]

L1 1uH [13 turns on T50-6 : replaces L2

I eventually added another output device in parallel with Q2, and used two cascaded 'half-wave' networks with a lower Q of 1 [Fig.2.]. This gave an increase in the output power to 1.35W., using 2N2219A devices, with small clip-on heatsinks and a 12V power supply. The extra sections of this filter are necessary as the lower Q factor decreases the attenuation of the transmitter harmonics. The harmonic levels I measured were : 14MHz, -49 dB, and 21MHz, -64 dB. relative to the carrier level. No other outputs were less than 70dB down.

FIG 2. OUTPUT NETWORK FOR INCREASED OUTPUT AND BETTER HARMONIC SUPPRESSION



C5 470pF
C6 820pF [or 1000pF]
C7 470pF
L2 1.1uH [16turns T50-2]
L3 [see L2]

Finally I added a change-over relay to the output and had only one remaining problem: how to net on another transmission without radiating significant power. This was solved by using the remaining relay contact to connect a 50 resistive load to the transmitter when switched to receive. This reduces the frequency excursion that occurs due to the change in load on the oscillator, when the output stage loading changes. This is shown in Fig.3.

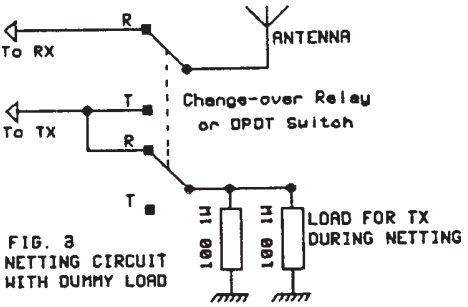


FIG. 3
NETTING CIRCUIT
WITH DUMMY LOAD

THE HERTZVERTER : A Top Band Receive Converter

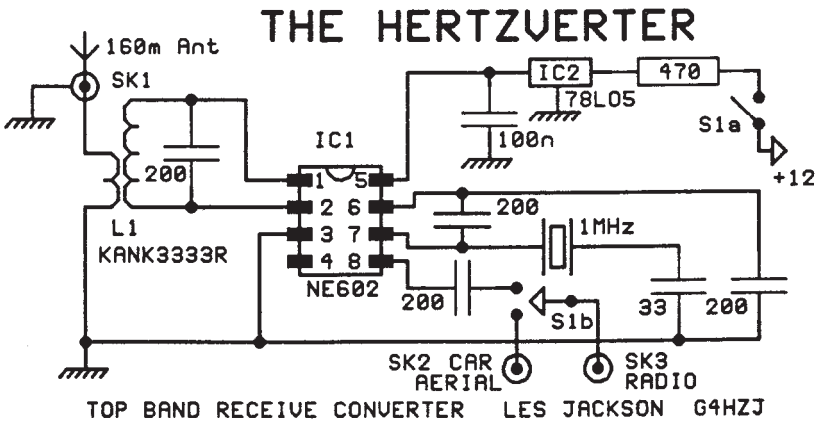
Les Jackson G4HZJ 1 Belvedere Ave, Atherton, Manchester, M29 9LQ

This simple circuit was devised in order to allow me to use my digital car radio in conjunction with the 'Chatterbox' 160m AM Transmitter [PW August 1991 by G3RJV] for mobile operation on Top Band. I am very pleased with its performance considering how easy it was to build

By mixing the incoming 160m signal with the oscillator of 1MHz, direct frequency readout is provided by the car display [e.g. 1963 is displayed as 963]. The preset buttons on the car radio can be used to switch between favourite frequencies, or manual tuning can be selected. The converter can of course be used with any MW radio for mobile, or portable or home use. How about hi-fi in the living room!

The construction is not critical. I used copper perf board [0.1" matrix] as I did not think it complex enough to etch a pcb. IC1 was mounted in a holder. L1 was mounted diagonally so as to fit into the 0.1 matrix. C3 was originally a 60pF trimmer which I found to have little effect on the X.O. at this frequency, so I replaced it a fixed capacitor. S1 is, of course, optional and does allow the use of the radio on MW/FM etc. when the XYL/GTD [Grumpy Teenage Daughter] are in the car!

Finally, from the safety angle, it is wise to put a fuse in the + lead to the converter as with all auto accessories. The current drawn by the unit is negligible so a fuse of around 1 amp is more than adequate to give that peace of mind when driving.



GERMAN G QRP CLUB MEETING : KOENIGS WUSTERHAUEN
23 - 25 OCTOBER : For Details Contact Rudi Dell, DK4UH
Weinbietstr. 10, W 6737 Bohl-Iggelheim. Tel: 06324/64116

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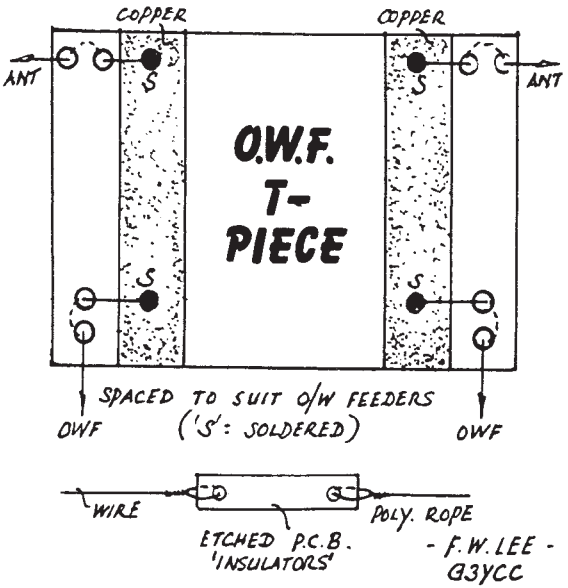
GET ONTO THE BANDS AS OFTEN AS POSSIBLE AND CALL 'CQ QRP'

THE DOUBLET ANTENNA

Frank Lee G3YCC 8 Westland Road, Kirk Ella, Hull, North Humberside

Having experimented for some years with a variety of multi-band aerials, including trapped and parallel dipoles, G5RV and so on, I was introduced to the Doublet aerial by Peter, G3PDL, during a talk he gave at our local club. He described how to put up the longest piece of wire you can in a straight line and feed it at the centre with open wire feeder. I tried this, in my case a length of 90 feet was possible, and it worked well on all bands, when fed through a Z Match tuner. The only anomaly was the performance on 80m, but this was improved by changing the tuning unit to a series circuit on this band. A long length of feeder is needed at G3YCC [some 90 plus feet] which takes a bit of making. It is well worth the effort, being cheap and very low loss, two properties close to the heart of the QRPer!. I have twice tried 300 ohm slotted ribbon, but find it inferior to OWF, the properties varying in damp conditions. In locations where a shorter feeder length is used, ribbon may be satisfactory. Lately, I have lengthen the top to 136 feet, which necessitated bending the ends down, but if this is done symmetrically, balance is retained.

I have also changed to a balanced tuning unit and am convinced the system worked better. It certainly does on the LF bands, including 160m, which is as one would expect with greater length. On 160m, a separate T-Match ATU is used, with feeders strapped and using the system as a centre fed Marconi.



There have been a few ideas in SPRAT for dipole centre pieces and I have include my ideas for use with doublets. The centre pieces are made from PCB, are light, strong, and again cheap! Construction is shown in the diagrams. The finished article is water proofed with Waxoyl or similar. I have used the idea for several years and can recommend it. Off cuts of PCB are used as 'insulators' for the system. Plastic wire is perfectly suitable, there is no need to buy hard drawn copper.

Try a doublet, one of the oldest and certainly the best, multiband antennas that will perform well on all bands

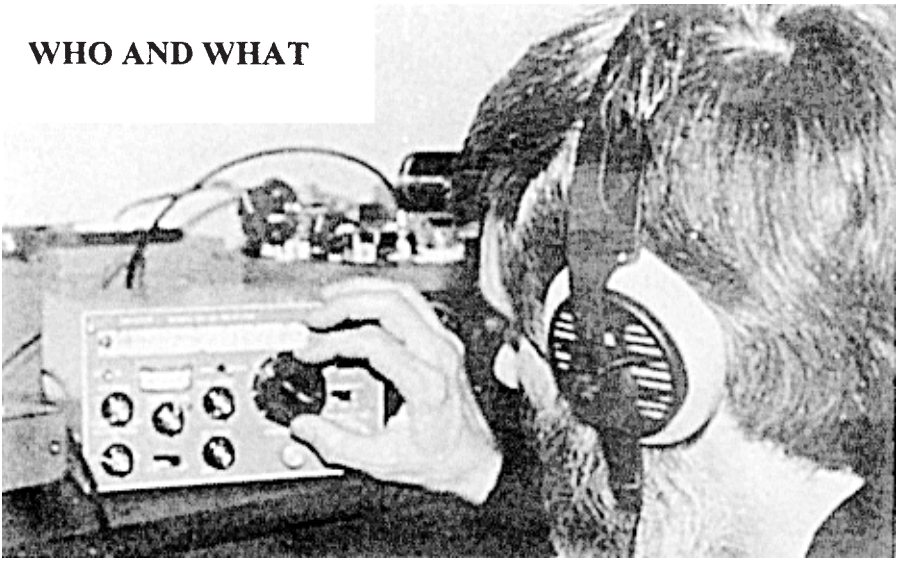
ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS-ADS

HELP: I am trying to convert a Howes CTX80 transmitter to 160m. Does anyone have any information? John Elsworthy, 27 Balton Way, Harwich, Essex, CO12 4UP.

HELP to obtain batteries for a Censound VHF Auto scanner [10 channel] small, 1.2v, soldered in pairs to make 4.8v. Also Manual to borrow/copy for TR2300. W.A. Graham Kerr, The Thatched Cottage, Whitchurch Hill, Nr.Pangbourne, Reading, RG8 7NY.

HW9 MODS: Who stocks the crystal filter IR88 H-400? SELL: QRP Classics, ARRL, DM20. Peter Karrais, DL1GPK, Jungbuschstr.25, W-6800 Mannheim 1, Germany. Tel: 0621/155413

WHO AND WHAT



You may know who it is but do you know what it is? G3RJV is pictured in the Dayton QRP Hospitality Suite listening to DAVCO Amateur Bands Receiver. It is one of those pieces of equipment that G3RJV admired many years ago but had never managed to find one. If anyone knows of one for sale - then let him know. This one belongs to Rick Campbell, KK7B. Rick's article in the August 1992 QST 'High Performance Direct-Conversion Receivers is probably one of the best on the subject for many years. Have you read it yet?

EXCHANGE: HW8, PSU Manual and HW8 Handbook in immaculate condition for good SW receiver, cash adjustment if necessary. Jeff Saxton, G0BBS, QTHR, Huddersfield, 0484-645923.

SWAP: Telford Communications TC5 & TC6, nicely boxed 2m QRP modules, for any battery Rx suitable for lending out to SWLs/Novices. Wyn, GW8AWT, QTHR, 0550 777234.

G4OTM thanks members for sending info on Oscilloscope {now working]. REQUIRES info circuits etc. on ex WD No.46 SET, 6 channel xtal cont. HF transceiver, also AR8, ARP12, ARP37 AT4 or equ. valves for the same. George Buckley, 57 Doyle Cl. Moorside, Oldham, OL1 4RG.

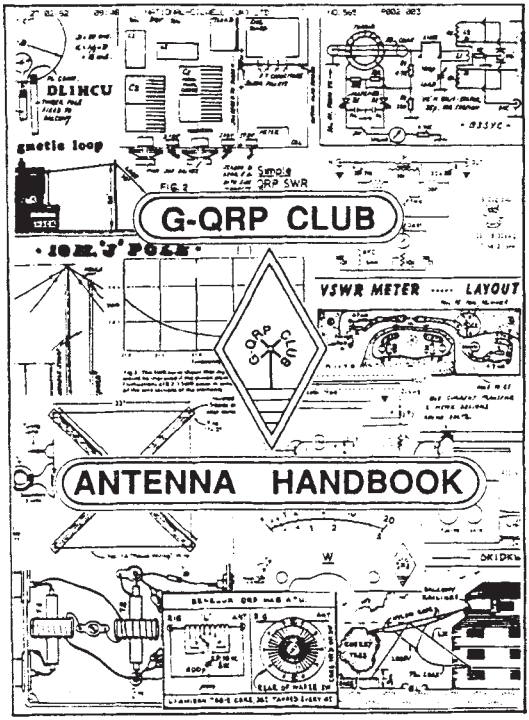
WANTED: YAESU FT77S [low power version of FT77] Transceiver. Must be unmodified, perf with FM and CWE filter options but would consider one without CW filter at right price. Non-driver so wthin reasonable travelling distance for a demo. Tel Keith, G0OZK, 061-477-5303.

WANTED: Valve Transmitter, Condition and Price to Bill, GM0KMG, 041-649-4345.

WANTED: Handbook or copy to borrow for HW8, 100mA ammeter approx. 3x3", Large size [10X or FT243] crystals for cw segments of 160, 80, 40m bands. Chris, G0JRM, 0284-735441 [Suffolk].

HELP in restoring the Hard Disk on an accidentally formatted BLEASDALE BDC680A MKII COMPUTER. John Rowlands, G0JYV, Tel, 0329 - 238383.

WANTED: HW8-HW9 unmodified, RACAL RA17 Receiver complete with desk top cabinet and circuit. Pase Alberto, IK3MLH, Box 300, 36100 Vicenza, Italy.



AN EXCITING NEW BOOK

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Published By The G QRP Club

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USA: Luke Dodds, W5HKA, 2852 Oak Forest, Grapevine, TX 76051. Tel: 817 481 3805
or Kanga US, N8ET, 3521 Spring Lake Drive. Findley, OH 45840. Tel: 419 423 5643

TAKE YOUR G QRP ANTENNA HANDBOOK IN YOUR LEFT HAND AND A PEN in your right hand and on the title page cross out GW0LNQ and make it GM0LNQ..... What a mistake to make for someone whose address is 'Mill of Schivas Cottage' !

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G-QRP CLUB ACCOUNTS

12th Feb 1991 to 11th Feb 1992

INCOME		EXPENSES	
Bank interest	£791.26	Artwork & drawings	£94.93
Morse tapes	£177.30	Awards and trophies	£278.53
QSL sales	£45.00	Bank charges	£604.04
Sales at rallies etc.	£4,400.41	Books	£2,601.29
Sales by post	£2,045.14	Capital expenditure etc	£682.13
Subscriptions	£18,463.23	Components for kits/sale	£2,947.36
		Duplicating & copying	£207.61
TOTAL INCOME	**£25,922.34**	Miscellaneous expenses	£217.75
		Officers expenses	£336.56
		Postage	£2,187.87
		QSL printing	£66.97
b/f bank account 1	£9440.30	Rally costs etc	£1,550.20
b/f bank account 2	£995.25	SPRAT mailing costs	£6,408.07
b/f bank account 3	£10609.37	SPRAT printing	£6,973.40
Income less expenses	£147.16	Stationery etc	£618.47
c/f combined bank accounts	**£21192.08**	**TOTAL EXPENSES**	**£25,775.18**

Despite these hard times, the club continues to enjoy sound financial health and we managed to hold our own despite increased costs last year. The bulk of these increases are due to postage yet again - an extra £2,236.27 (a £4549.48 rise in two years!).

The National Westminster Bank has also given us a hard time during the year with lower interest and higher charges. We have negotiated a package to reduce the overall effect by clearing the current accounts into a high interest account at the end of each day but we are still £809.04 down on the previous year.

The basic subscription rate is unchanged (£5 since 1986) but may need reviewing within the next two to three years. Buying components and equipment in bulk to benefit members has contributed to maintaining this level and we shall try to keep this up. The amount for subscriptions may appear to be a little low as some of the subscriptions collected abroad were paid after the end of the financial year.

Grateful thanks are due again to Peter, G3KNU, and Betty, GØNYL, who kindly audited these accounts.

G3PDL. August 5th 1992

LOCAL TECHNICAL HELP(1)

Syd Beauchamp, G3SYD, is willing to offer assistance on technical matters to local members. Anyone writing should enclosed an SAE. No telephone calls after 9pm please. Syd will try his best to assist members by return. Possible callers, please ring the house first. S. Beauchamp, G3SYD, 1 Gosden Close, Furnace Green, Crawley, West Sussex, RH10 6SE. Tel: 0293-511708

LOCAL TECHNICAL HELP(2)

Ron Sexton, G4IZS, a keen constructor and professional engineer has offered to help with technical and 'get it going' advice for members in his area. Please supply all details and meet his expenses. He can be contacted as: R.D.Sexton, G4IZS, Banavie, 50 Manor Ave. Cam, Dursley, Glos, GL11 5JF.

NOVICE NEWS

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

Welcome to more News of the G QRP Club Novice Members.

Novice Activity.

Jenny 2EOABC has really been "pounding the Brass" and her exploits have won much fame right across the UK and into Europe. Many Amateurs have commented on Jenny's QRP Signal; including Bastian PA3FFZ who writes "worked Jenny in Liverpool twice pwr hr first time 1W" Laurie G4XJU also notes Jenny's signal, as does a Member in ON who says "Jenny's Morse is very good - it is sent really well". Well - Jenny - looks like you are doing real great there, please send in details of your Station to the Column so we can feature you.

Going back to G4XJU - Laurie has worked 9 Novices and for the most part says that their signals are "good for QRP". The Novices Laurie wkd are: 2EOAAF; 2EOAAJ, 2WOAAI, (Trevor is 74 yrs) 2EOAAU 2MOAAW (1st GM Novice?); 2EOABC, 2EOABF, 2EOABJ; and 2EOABI. I've wkd three of these also).

Phil - 2EOABI

I totally agree with Laurie that Phils signal is very good. Phil is 12 Yrs old - I have worked him twice and we have exchanged Qsl's. Please send in details of your Station Phil won't you? Phil was also copied in QSO with Frank - W1DNJ on 21 Mhz - FB!!

Central Telegraph Office

Tim, G4IYR, is President of the above organisation, and writes in to say he enjoys the Column - and that it takes him back to his roots. Tim was Chief Signals Officer of British Control in Turkey; and spend 13 years as a GPO Telegraphist. Thanks for the comments Time - much appreciated.

Straight Key Setting

Following last Sprat's feature on the above; Gus Taylor G8PG our Comms. Manager has written in with the following additional advice to new SK operators;

Key Position; An inch or two back form the edge of the Table; so that when you are sitting comfortably your Forearm is at right-angles to your upper Arm. Feet flat on floor.

Height of table; The Key knob should be 28 - 30 inches above the floor Better a little low than too high.

Gap Adjustment; Insert an ordinary Postcard for a Beginners setting making the Gap smaller as you become more proficient.

Spring Tension; Enough to send easily without becoming tired; less Tension will be needed as you become better.

Key Grip; (for right handed ops) Thumb on left side of Knob, forefinger at centre. middle finder slightly to left. Don't grip tightly and send by wrist movement not elbow.

Thanks Gus. If you all follow that, combined with last sprats details you should have no problems. write in if you have.

Novice Transmitter

That great construction man - George GM3OXX - has come up with a small easily built TX suitable for Novices or newcomers. George calls it the "Nat" (Novice Amateur Transmitter?); and depending on how much Voltage you apply to the little rig - its Power Output is variable up to about 10 Watts. Note that it is a TX ONLY and you will need an RX to accompany it plus changeover relay.

For a photocopy of the complete design including assembly instructions; please send me an A4 size envelope to be above address.

Awards
Novices are already starting to ask about Club Awards. My advice in a nutshell; is to start with the basic Novice Award i.e. 50 QSO's confirmed in your first year of operating, and to go for the 'QRP' Section (you'll have to anyway with 3W 1!) then build up your Certificates by 'Worked Members' 'Worked Countries' and '2 Way QRP'. Given time - they can all form part of a G QRP Club 'Master Award' (See your Members Handbook for all details)

G0NEZ
At my QTH - activity is still aimed towards the Club Master Award; and I now have 21 Countries to confirm having achieved the other requirements. Its nice to see so much activity around 3.560 - 3.570 but that "fish fone" is something else! The Propagation experts tell us that with the decline in Cycle 22 improvements can be expected on the lower frequency bands so lets hope they are right and that 80 metres does pick up.
'Finally - thanks to all who have written in - if you are a Novice please drop me a line with your ambitions, station layout etc., and I'll be glad to feature you. Next time - details of a simple home made Wavemeter, and another look at Antennas. SU until then and here is wishing you good QRP for now.

SSB COLUMN

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

I have had several comments from members that I see at the various rallies around the country. I would appear that we do have a lot of closet QRP SSB operators out there who will not put pen to paper and tell us what they have been doing. Some asked not to be named, perhaps they thought that using SSB at low levels was not quite 'kosher'.

One member that is, rightly, proud of his success is Keith G0FDJ. His aerial system is surrounded by telephone wires with a power line just a few metres away. Enough to make all but the most enthusiastic give up in disgust.

Keith had a lot of problems, with high power he was heard on various 'phone lines even ringing a few 'phone bell as well. A friend whispered the magic words 'Try Low Power'.

Keith comments, 'It has saved my ham life', some of his captures include HK0, JY3, 9M1, VU2, VQ9, 4J1, TM1, ZA1, 4K5, 5H0 and many more. Many of these were caught with just one or two watts, mostly on 20m.

One other comment from Keith... Whilst working Jack, K3CI, who was using an |IC781 with amplifier into a 5 element tribander, Jack didn't believe the power that Keith was using, so he reduced the drive level to nothing, no indication of any power output on the external power meter and the QSO still continued! Does this sound familiar? It looks as if we have another US convert.

QRP A.R.C.I.
There appears to be some confusion in the USA about subs paid here in the UK. One member wrote, requesting information about payments made in this country. He was told I was the G-QRP rep here and that all payments should be made to the USA direct.

If you have had similar problem I can confirm that I am still handling ARCI membership/subs for all G QRP Club members. Not only for the UK, but all members. Please note that I send these to the States monthly so there may be some small delay. It is best if you renew promptly to avoid missing out on one of the Quarterly's.

QRP COMMUNICATION FORUM

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

AN ALL-TIME DXCC SCORE OF 303 COUNTRIES, all worked with 5 watts or less, has been achieved by Randy, AA2U. It is interesting to note that 180 of these countries, plus a 5-band DXCC, were achieved with simple wire antennas before a tower and beam were installed. Randy also enjoys milliwatting and has made DXCC at 100 mW and 85 countries with 50mW. Thanks to Al, KB1FK, for sending me a copy of the "DX Magazine" article giving the above information. Excellent publicity for QRP and, one hopes, something that will make the 400 watt linear brigade think again.

NORWEGIAN WARTIME RESISTANCE RADIO OPERATORS often used a wire clipped onto a galvanised iron rain gutter as an antenna. A recent QSO with a 2W PA3 station using such an antenna shows the idea still works. But what does one do it all the gutters are plastic? Iain, G3VPM, has found the answer. His 7 MHz dipole is clipped on to the outside of the plastic brackets supporting the gutter, and the co-ax feeder is run down to the shack. The height is about 20 feet, and it was putting out an excellent 4W signal when we worked each other. No doubt a multi-band LW or doublet with tuned feeders could be supported in the same way.

AN UNUSUAL RIG, namely an old 1OW Russian tank radio gave DL5JBN the contacts with 50 stations required for his CW Novice Award. Not many of those rigs on the bands!

QRP EXPEDITION TO RUSSIA? If you are interested in planning such an expedition the following, received from the RA QRP Club, may be of help. "If you want to conduct a QRP expedition in any region of Russia we would be glad to help you. Contact our Club and we will take into our own hands the problems associated with transport, accommodation, food, power supplies, and cultural measures. Our address is Lipetsk QRP Group, PO Box 229, Lipetsk, 398093, Russia". Please note that conditions can be difficult at times in Russia, and that neither the G QRP Club not its officials can accept any responsibility for the accuracy or otherwise of the above announcement.

VERY SPECIAL CONGRATULATIONS TO Leith, VK5LG, for his contact with VK5ALC over a distance of 2700 km. What was special about this contact was that Leith was using the G3YUQ single transistor TX driven from a 1.5V dry cell, with a DC INPUT of three milliwatts! The antenna was a half-size G5RV. Well done Leith!

AS FAR BACK AS THE LATE 1960s I was associated with work on telegraph message switching systems which could provide full store and forward facilities, priority routing, etc. etc. The peripherals were mainly teleprinters, and the bearer links line or uhf radio, but even at that data they provided the facilities of modern data systems even down to logging. So the "modern marvel" of amateur date transmission is not really modern at all. The commercial boys were doing it years ago. What does worry me is the effect that wide-scale data usage may have on the future of our hobby, Two things that attract a great many people to amateur radio are firstly the personal touch - listening to the first or voice of the man at the other end of the contact - and secondly the excitement of the unexpected. One goes on the bands and never knows exactly what it going to happen next. One may end up contacting a really interesting person only a few miles away, or some exotic DX on the other side of the world. Data working removes the personal touch to a great extent (particularly with voice synthesis on the horizon). One is now using a machine to communicate with another machine, and much of the personal element is lost. Similarly, with DX working the data box will tell you immediately if there is new DX around, the computer in your all-singing-all-dancing rig will tune it to the required frequency, the processor in your el-bug will send your call at the touch of a button until you are answered, and will then send the mandatory "599 TU" for you. The machine will then fill in your log, and print out a QSL. To me all this sound like going fishing with a hand grenade - you produce lots of dead fish, but the thrills, skills and pleasure of real fishing have gone! I must stress that this is a personal viewpoint, not in any way

reflecting Club policy, but I believe that it puts forward points that should be reflected upon very seriously by anyone with a real interest in the future survival of amateur radio.

THE GERMAN BEACON DK0WCY on 10149 KHz is now broadcasting a propagation forecast every ten minutes, starting on the hour. The forecast is produced daily at about 1100 UTC. It gives the R number, the flux, and the AK number, followed by a short forecast of sun activity, magnetic field, and SWF. The transmission is in English, using cw at 14 wpm. A most useful service; we congratulate those who are running it. (What happened to the long-promised UK forecast broadcasts?)

STILL TALKING PROPAGATION the opportunity was taken during the recent spell of F/G8PG/P operation to test out the W3EDP antenna as recommended for Novice use by David, our Novice Services Manager. Despite conditions ranging from "just about fair" to "really horrible", the W3EDP produced contacts with 12 countries on two-way QRP and 22 countries overall, including the rather rare group of Canadian islands in the Bay of Fundy. Having last used a W3EDP more than 50 years ago it was nice to see that it still performs well. And once again one had the incredible luxury of 12 days operation without hearing a single colour TV time base!

BY SPENDING ABOUT HALF HIS PRACTISE TIME READING IN HIS HEAD rather than copying the morse, Duncan, G0RJT, reckons he has increased his overall reading speed by about 4 wpm (22 to 26 wpm). This is almost certainly due to improved vocabulary (the ability to recognise words as words, rather than groups of individual letters). A good vocabulary helps you to copy behind, which is the secret of high speed morse reading. Incidentally Duncan is a mature person who only took up morse recently, so the fact that he has achieved this sort of speed makes a nonsense of those who say that 12 wpm is "too difficult".

CLUB SPONSORED KITS such as those produced by Kanga have a wide following amongst the amateur radio fraternity. Now, exhibiting such kits at exhibitions in France is producing increasing interest from technical high school teachers and college lecturers in the electronics field. Thus, thanks to the initiative of our ever-growing French section, amateur radio in general and QRP in particular is being introduced to an increasing number of people engaged in professional electronics. Incidentally, we recently enrolled our 220th member in France, and continue to receive excellent publicity through out regular news feature in "RadioREF". This is an idea other members outside the UK might take up. A QRP column in your national radio journal, even if only on quarterly basis, will serve as a rallying point for Club members and other QRP operators in your country, and help to strengthen your national QRP movement. Why not try to start such a column?

APOLOGIES TO G0IFK AND GM0DHD for a slip in our last issue. The first G0 QRP Master is of course G0IFK, AND GM0DHD is the first GM0 to receive the award.

THE DXCC MAP OF Europe seems to be changing by the minute, either as a result of civil war, or of political agreement. In what used to be Yugoslavia, Croatian stations are already using the prefix 9A, and no doubt there will be other changes when the hoped-for peace returns. Change in what was Czechoslovakia seems to have been achieved peacefully, with what used to be OK3 going its separate way and presumably eventually appearing as a new DXCC country. Final ratification of DXCC status in all these areas must, of course, await the decision of the DXCC Committee. In the meantime all we can do is to congratulate those who have achieved peaceful change, and hope and pray that where armed conflict exists just cease-fires may soon be negotiated. Also, of course, our thoughts and prayers are with our members caught up in areas of conflict.

INTERNATIONAL QRP DAY 1992. Conditions were very bad on 17th June, and only a small number of logs were received. In view of this no QRP Day plaque will be awarded this year, but all those who did submit logs have received a commemorative certificate. Many thanks for your support chaps.

CONGRATULATIONS TO NEW QRP MASTERS UA3APV and G4AWT. Well done!

AWARD NEWS. Congratulations to the following on their Awards.

QRP WAC. LA7FF, G3FCK.

QRP COUNTRIES. 200 GM4UYE (Well done); 75 G4AWT; 50 LA7FF, ON4KAR; 25 Y21LH, G0KRT, SM6YF, G0BX0.

WORKED G QRP CLUB 920 (!) GM3OXX; 760 G4JFN; 440 G0IFK; 400 GM3RKO; 360 G3MBN; 320 G3INZ; 260 G3FCK; 160 G0KCA; 140 G4PRL, RV3GM; 120 G4ETJ, G3MJX, SM6YF; 100 G4AWT, G0KRT, G4VGS; 80 LA7FF; 60 UA3APV; 40 GOOXT, G4ICP, G0KPG; 20 FI3PCU, W5LYM, F/G8PG/P, GONTR, G4EHU. TWO-WAY QRP. 40 G4MQC; 30 G3FCK, G0NEZ; 20 G0KZO, G4PRL, UA3APV; 10 G4VGS, W5LYM, G0KPG.

STATIONS IN WHAT USED TO BE EAST GERMANY can now join our Club at will, so the privilege of Club awards being issued to non-members in what was the GDR has been withdrawn. (Prior to re-unification amateurs in the GDR were not allowed to join clubs in the west).

THE PANTHER : A Commercial Antenna for QRP Use

Review By Gus Taylor G8PG

The "Panther" is a half wave, end-fed antenna which comes complete with its own atu. Connection from the atu to the rig is via co-axial cable using a BNC connector which is supplied. The atu is unusual in that it uses a fixed capacitor and a slug tuned coil, adjusted through a small hole in the plastic atu box with the aid of a trimming tool. The box is 75 x 50mm in size, but not weatherproofed, although the components inside are. The output is via a BNC connector on the side of the box, and the antenna wire is permanently connected to the box, which is provided with a plastic mounting bracket. The makers claim that when properly tuned and using a rig such as the HW9, the swr in the 14 MHz band will not exceed 1:1.5 between 14.0 and 14.25 MHz. Note that although the model tested was for 14 MHz, the makers can supply models for all the popular HF bands. Maximum safe power is 7 watts rf.

To test the 14 MHz version, it was erected as a sloper, with one end at 20 ft and the far end at 12 ft, and firing east. The atu was almost in resonance as supplied, and a small touch with a trimming tool brought the swr figures below those claimed by the makers. Despite very poor conditions during the tests all Europe was worked, including RST 599 reports from as far away as Moscow. Had there been any DX available there is little doubt it would also have been worked.

While testing the antenna two experiments were tried. Firstly 5 ft of wire was added to the end with the object of reducing the end impedance considerably. This produced a small, but noticeable, improvement in the swr. Secondly, realising that the horizontal radiation pattern of a dipole somewhat limits transmission in certain directions, another half wave of wire was added to make a full wave. This worked very well, and gave a further improvement in swr. By adding a further half wavelength of wire and a suitable connecting link it is thus possible to use the system as either a half wave or a full wave. If sufficient height is available it can also be used vertically.

The cost including carriage and VAT is £26.00 from Hesing Technology, 41 Bushmead Rd, Eaton Socon, Cambridgeshire PE19 3BT. All enquires to them, please, not G8PG.

MEMBERS' NEWS

Chris Page G4BUE

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

I'm going to use this different font (sans narrow) which enables me to get something like 35% more text into the same space. More for you to read! I used it once before (SPRAT 70) and there were not any adverse comments about it.

In a previous issue of SPRAT I hinted at some problems I had had with the new Ten-Tec Argonaut 535 transceiver and promised further information about it. The outcome is that I'm now very happy with the rig I have eventually finished up with! I gave it a thorough test during our National Field Day in June in the new QRP Section and with 572 QSOs in the 24 hours using a single piece of wire at 35 feet, I was very pleased with it. Behind this lies a story, however!

I have sent George the story and my comments about the new Argonaut so he can incorporate them with his own, but I'm not sure how much space he will have in SPRAT for it. I have prepared a three page information sheet describing my experiences and views about the rig, including the model 290 attenuator and some comments from other members. You are very welcome to a copy of this if you're thinking about buying an Argonaut or just interested. All I ask is for a large SAE and/or IRCs to cover postage.

I bought the model 290 attenuator for the Argonaut at Dayton and it has rekindled my interest in milliwatting. The attenuator allows you to accuratetly reduce power to 10mW, but by dropping the output of the Argonaut from 5W to 500mW it can be used to reduce power to 1mW, or even to 100uW by dropping the Argonaut to 50mW!

The Radio Sport Contest was a good opportunity to try it. I wasn't able to work the USA with less than 2.5mW but 100uW was all that was needed to work two YU stations and, best of all, just 50uW to work an SM. I am now into microwatting as well as milliwatting!

Now to a first. A report of "CB" in Members' News! GØCJM has been using QRP (2W) on the 11 metre band to work around Europe with home made antennas in his loft. Reb says his biggest mistake was selling his FT757, and he now wants to buy a QRP CW tranceiver, if anyone can help him. A reminder from David, GØNEZ to check the novice frequencies (1960, 3570, 21130 and 28160) for our UK novice members. There are now over a dozen 2E calls amongst members.

Although I had to cancel the QRP Party this summer, it hasn't stopped overseas members visiting Alamosa. Jerry, VE5DC and his wife Kay, VE5ADN visited in July and Jan, OK1NR in August. Work has been progressing on the new pateo and landscaping but the recent awful weather has prevented progress being made as far as I had hoped. Congratulations to G7FCQ who is now GØRSR. Dave is QRV with an FT101 and long wire and has been using 2W SSB on 80m and 10W on 20m. His best DX has been W1 in MA.

GØROT is concerned about the conditions on the CW end of 80 metres. Mike says there seems to be a lot of ship to shore traffic between 3540 and 3560 throughout the day making it difficult to work QRP. He feels rather strongly about it, as they are secondary users, and invites other members experiencing difficulties to write to him with a view to drawing it to the appropriate authority.

Y26SW was in EA6 land on holiday this summer but did have enough room to take his HW9 with him. He is going to build a smaller transceiver for future trips. A member who did get on the air while on holiday was G3XJS. On the 14th August Peter was QRV as 3A/G3XJS from his mobile set-up. I was pleased to work him on 20, 30 and 40 metres and whenever I heard him he was doing brisk business with the QRP gang. While I was looking for him on 40 metres I came across GM3OXX/P who was on the last day of his holiday in Scotland. George didn't know about Peter's 3A operation but needless to say he did by the end of our QSO!

G4LGZ is off to the Falklands for four months from 1st October and is hoping to use his old VP8VN call that he last used from South Georgia in 1979/80. Jon is hoping to take a 20m QRP kit with him and will be listening particularly for club members.

In a previous column I mentioned the lack of QRP frequencies for the WARC bands. The Michigan QRP Club promote 10106 (same as us), 18080 and 24910 for QRP. I suggest we also adopt these and give them a try in the QRP Winter Sports. Let me or Gus know how you found them when sending in your Winter Sports reports. By the way, I shall be applying for GBØQRP again and am aware of at least one other specia L QRP call being applied for.

G3SYC says that LZ1BB is QRV on *the* band - 6m. Brian had a two-way QRP QSO with Harry on 22nd June. He says the current E's season has provided some remarkable openings for QRP users and wonders why the G-QRP-Club hasn't realised the potential of 50MHz for QRP. Most of the European locator map can now be worked, which was not the case when the band first became available to UK users.

PA3BHK has also found the summer good for VHF. With 9W SSB and an indoor antenna, Robert worked 21 countries on 6m. 2m has also been good with IT9TVF at 1705km with his DSB TX being the best dx. Every year in the middle of June the Benelux QRP Club have a camping QRP Party week-end and Robert says that some of the antennas were bigger than the tents. G-QRP-Club members are welcome to join them next year, (I can publicise the information in the Spring SPRAT).

G3SOX runs an all homebrew QRP station to a 66ft long wire antenna. Harry picked up all his bits at rallies. GØROT wrote as "I simply want to share the excitement I've had QRPing." Mike has built a Jandsk QRP TX for 80m which he is using with a low G5RV. He says he nearly fell off his chair when CT2CY came back to him with a 339 report and was so shocked he messed up the rest of the QSO!

Mike asks how he can improve his CW speed as he is finding it difficult to copy and write it down at speeds above 14/16wpm. Members' ideas are requested but I stopped trying to write it down when I got to that stage. It's difficult at first but you read the code in your head rather like, (so I'm told), interpreters listening to a foreign language.

W6SKQ was due to be in KH6 during the second half of October and will be QRV as W6SKQ/KH6 monitoring the QRP frequencies with his Argonaut 515. Bob's group had a problem with a bear roaming around their campsite during Field Day. I've heard various Field Day stories but never that one, at least not in the UK !Despite this they still netted 1000 QSOs. GØIAX has been trying milliwatting and worked DL with 150mW and UA9CM with 1W.

Colin Bayliss (didn't give his call) says "joining the Club has rekindled my interest in the hobby". He has just finished building the G3TSO rig from the October 1988 RadCom and says some hundreds have been made. Colin says many mods have been made to the original circuit and if members let him have theirs, he will collate them and write them up for SPRAT.

Did you know that GB4QRP was on the air in June? GØIFM and the Leicester Club used it as part of their Low Power Activity Day. Colin says they operated CW on 20, 40 and 80m and SSB on 2m. G4VPM will be in 5B4 for the Winter Sports and hopes to be on the air from there. Andy will be operating from a hotel so is not sure what type of antenna he will be using.

G3DNF has been continuing his IOTA hunting and also made 143 QSOs during the AGCW-DL Summer QRP Contest, over half of which were on two-way QRP. Gordon was pleased to work BY1PK for a new one and says there were three other contests going on at the same time! Outside the contest he worked DL3BA who was running 200mW, and said their last QSO was in 1948!

G3GC has sent a copy of YARCNEWS (mag of the Yeovil ARC) containing a report on the QRP Convention in May. Furthest traveller was KM4ZH from KY. Larry heard about the event while visiting the Club's stand at Dayton! The talks were interesting and well attended and there was a good display of homebrew and vintage gear. Special thanks to G3MCK who stepped in at the last minute with a talk on SWR when one of the scheduled speakers did not arrive! The Fun Run was won by G4JFN and G4PRL was runner-up in the nine entries. The three Fun-Run stations, GB2LOW, GØHDJ and G3GC made over 200 contacts during the week.

Finally, I would like to tell you about a new paddle: it's called the Jones Key and is manufactured by Peter Jones Engineering of Surrey, England. I have been using it regularly since April and have now put my Bencher back in its box! In addition to being very smooth to use, it has very fine adjustment, is very heavy, looks good in brass with a bright red base and has a couple of unique features; both the height and gap between the handles can be adjusted to meet the user's personal preferences. The key is available from Bredhurst Electronics of Handcross, West Sussex at an introductionary price of £57.95 and in the USA from Palomar Engineers of California.

Looking forward to seeing you in the QRP Winter Sports. Let me know how your autumn goes, by 20th November, please.

73, Chris

NEW! DTR7 – 40m CW TX-RX

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