



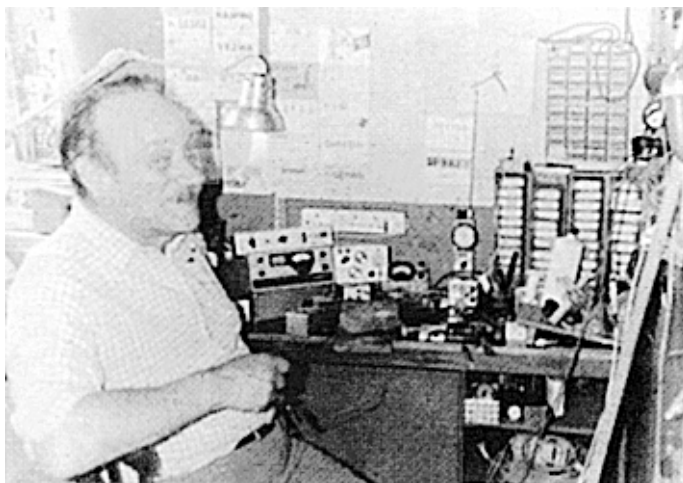
SPRAT

THE JOURNAL OF THE G-QRP CLUB
DEVOTED TO LOW-POWER COMMUNICATION

ISSUE NR. 40

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Autumn 1984



Ronnie Marshall, GM4JJG, in his shack in Gourrock, Scotland.

40m VFO ~ Simple PSU~160/80 Receiver ~ Junk Box TX
40m Vertical ~ Mini ATU ~ Bobtail Curtain~ IC720A Mod
Mini 40 TX ~ Argosy Attenuator ~ Dart as Transceiver
Nor's 20 TX ~ SSB~Awards~Contests~Members News

JOURNAL OF THE G QRP CLUB

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OL11 3HE.
Rochdale [0706]31812



Editorial

Dear Members,

PLEASE NOTE THE QTH CHANGE ABOVE.

As you will see, from the 1st. of September, I will have moved to Rochdale to be vicar of St. Aidan's Church, Sudden. I am sure that those of you who have moved house in recent years will understand if I ask members to go easy to mail, for which they require a reply, for a little while. I look forward to meeting members who will now be local to my new QTH, please feel free to call me on the above number and introduce yourself.

The summer has had its share of club social gatherings. I visited Scotland and met several GM members (see centre pages) and then did my usual southern England trip and met G4BUE, G3VTF and G3ROO and took a lesson from G4GIK on vintage radio restoration. This visit also included a day at the Chalk Pits Museum in Sussex with a personal guided tour by Ron Ham of his vintage wireless museum. I urge members who had not been to go and see this museum. I have spoken at several radio clubs and specially enjoyed a chat with Nick, G2NJ, at Peterborough.

With the next issue, SPRAT is ten years old. That will be a rather special issue. Please keep the material flowing for SPRAT - sketches and notes are all that we require. Remember to line yourself up for the QRP WINTER SPORTS from Dec. 26th to Jan. 1st. We would like to make this the best activity period ever at the start of our tenth year. The details were in SPRAT 37 but will be published in the December Rad Com and the winter issue of SPRAT.

Best 73 fer nw

G3RJV.

G-QRP-Club QSL EXCHANGE: G4BUE will distribute cards for other club members via the mailings of SPRAT. Please add the number of the recipient of the card on the back right hand corner. This service only applies to interclub QSOs. The cards may also be sent in usual club mail to G3RJV. The cards are sorted by Pam Page, G4BUE/2 and can be sent to her at "Alamosa" The Paddocks, Upper Beeding, Steyning, West Sussex, BN4 3JW, England.

Subscriptions

Renewal (Rates: £3.50 or \$9.00 US) to Alan Lake, G4DW, 7 Middleton Close, Nuthall, Nottingham. NG16 1BX. PLEASE QUOTE YOUR CLUB NUMBER. Cheques: G QRP CLUB. A reminder is automatically recorded in membership number sequence on the address label of SPRAT, please ignore if you have already paid.

A 40 METRE VFO By Wes Hayward, W7ZOI (From QRP ARCI "QRP QUARTERLY")

An often asked question is, "Which VFO design is best?". I've built many circuits and have concluded that the exact circuit topology makes little difference. Both thermal stability and noise spectral density have been measured. The circuit must be designed for high loaded tuned circuit Q, and the best components must be used. Then, a Hartley, Colpitts or a Clapp are identical so far as warm-up, drift and overall stability. Low noise results are obtained as well as the stored energy in the tank is maximum.

Perhaps the simplest VFO is the non-critical Hartley, shown in Fig. 1. The low value coupling capacitor from tank to FET gate ensures high resonator Q. The 2.7pF value shown may be replaced with a small air variable cap. The diode shown provides automatic gain control to help establish clean amplitude limiting. The internal FET diode may conduct if the external diode of Fig. 1 is omitted, resulting in thermal instability and high noise. FET type is not critical, although low I-dss types such as some (but not all) MPF-102s should be avoided, for output amplitude may then be low. Motorola 2N5485 is a good, inexpensive choice. The 2N4416 is also great.

Exact inductor value is not critical. A good starting point is a coil with a reactance of 100 ohms, about 2uH at 7MHz. Tap position is also not critical. It should be at about 20% of the total number of turns from ground.

Coil construction is somewhat critical. The best inductors I have found are wound on Amidon -6 toroids. The -6 material has a temperature coefficient of +30ppm/deg. C lower than most ceramic forms, especially those with a tuning slug. The core should be wound with the wire tight against the toroid. Air gaps can degrade thermal stability. Wire size is not critical, but lean towards the larger sizes.

Capacitors can be very critical. The best stability I have observed is with NPO ceramic caps. Herein lies a problem for the amateur experimenter. Good quality NPO caps. are not readily available. I recently purchased some inexpensive imported NPO caps. from a mail-order source. They were used in the VFO shown in Fig. 2 producing a large warm-up drift of 700Hz. Replacement of the 470pF cap. in that circuit with a high quality, domestic unit reduced the warm-up drift to 100Hz. Measurements were made at 7MHz.

If good NPO's are not available, an alternative is the polystyrene cap. They have a rated temperature coefficient of -150 ppm/deg.C. The poly caps, may work very well with Amidon -2 cores which have a positive TC of similar magnitude. Has anyone out there done measurements on this? Incidentally the poly caps. work very well as temperature compensation elements for tuned circuits using -6 cores, air variables, and NPO ceramic capacitors, yielding exceptionally stable oscillators. Poly caps are readily available.

Circuit board layout is not critical, but a single-sided board is preferred. The capacitance of a double-sided board is thermally unstable and has a low Q. Ugly construction (QST, August 1981) also works well.

An output voltage may be obtained from the FET source. A better method is to extract the signal from the resonator via a capacitive voltage divider, yielding lower harmonic content.

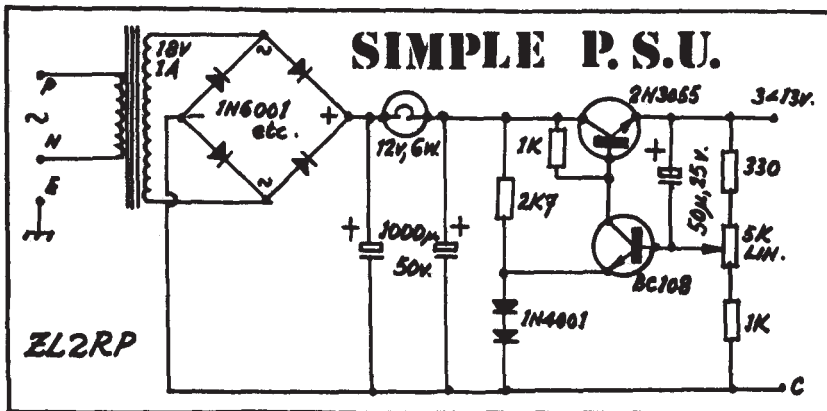
All comments regarding component quality apply equally to other oscillator circuits (Colpitts, etc.) and to circuits using bipolar transistors.

Some rigs use VFOs operating at the same frequency as the transmitter output. Others use frequency doublers. Either method will work. However, if there is no frequency multiplication, the VFO must be well shielded from the transmitter output. Stray coupling back to the VFO can cause the output frequency to shift when the transmitter is keyed. Any signal within the 3dB loaded bandwidth of the oscillator tank can have dramatic, and usually undesired, effects. Shield or use a doubler!

The best frequency doublers are those using balance. See the discussion of this in Solid State Design for the Radio Amateur, page 42. The two-diode doubler works very well and is simple. It does take moderate drive power, though. The doubler shown in Fig. 2 uses an MC-1350P integrated circuit. This type is cheap, readily available and offers high gain. It may be driven directly from the oscillator tank through a capacitive divider. The input drive should be confined to about 0.3 volts peak-to-peak. Otherwise, the output power may actually decrease with increasing drive.

The output from the 1350 doubler is low, so gain is required to reach the 1mW (0dBm) level. A 2N3940 feedback amplifier is included in the circuit of Fig. 2. Incidentally, the 1350 works well into the VHF spectrum. I have used them up to 2 metres.

The VFO shown in Fig. 2 was built for use with a portable 40 metre transceiver (shown in Houston, October 1983). The rig is like the "Micromountaineer" (QST, August 1973) with a built-in crystal. However, it will also operate with an external VFO. The basic VFO operates 3.5MHz. The circuit is configured for use with a direct-conversion portable transceiver with a 800Hz frequency shift activated by a DC voltage in parallel with the VFO output signal. The 5.6pF cap. shown in Fig. 2 may be increased if a larger shift is desired. A 22pF value could be used for a stand-alone transmitter. The VFO should run continuously rather than be turned off during the receive periods.



A SIMPLE ADJUSTABLE VOLTAGE POWER SUPPLY By B.E.G. Goodger, ZL2RP (from ZL "Break-in")

Recently having the need for a voltage variable power supply with some degree of regulation to run a number of transistor circuits of assorted voltages between 3 and 12 volts the circuit below was built up from bits and pieces from the junk box.

To provide some protection against overload the 12 volt lamp was included. As its cold resistance is low it does not affect the operation of the supply at normal currents of small transistor equipment, but when the current rises above 250mA the resistance increases rapidly so that the power supply voltage is increasingly dropped across the lamp.

Using forward biased diodes allows the supply to be set down to around 3 volts. While this is not the ultimate in power supplies for small transistor work it does a useful job and eliminates the need for a variety of batteries. It is built up into a small utility box with the 2N3055 on a small aluminium heatsink plate.

TOP 'N' EIGHTY D.C. CW RX.

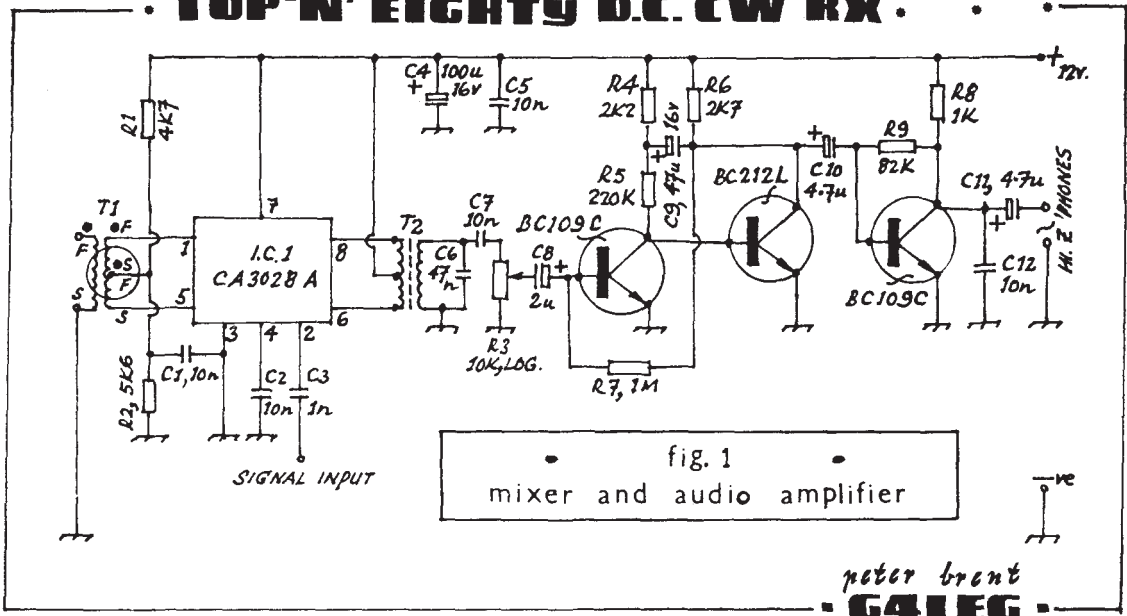


fig. 1
mixer and audio amplifier

pete brant
G4LEG

Fig.1. T1: 12+12+12t trifilar on FT37-62 or T37-6 (Amidon) Observe phasing by dots (S=start,F=finish)
 T2: 2000 ohms Pri, C.T. to 20,000 ohms Sec.
 Resistors: All 1/4 watt 5%
 Capacitors: All 10nF disc ceramic 30v. pf values are ceramic except where noted (poly=polystyrene)
 VC1 100pF airspaced (Jackson U101), VC2 365pF dual section (Jackson O2), TC1 30pF (Jackson C303) trimmer or similar.

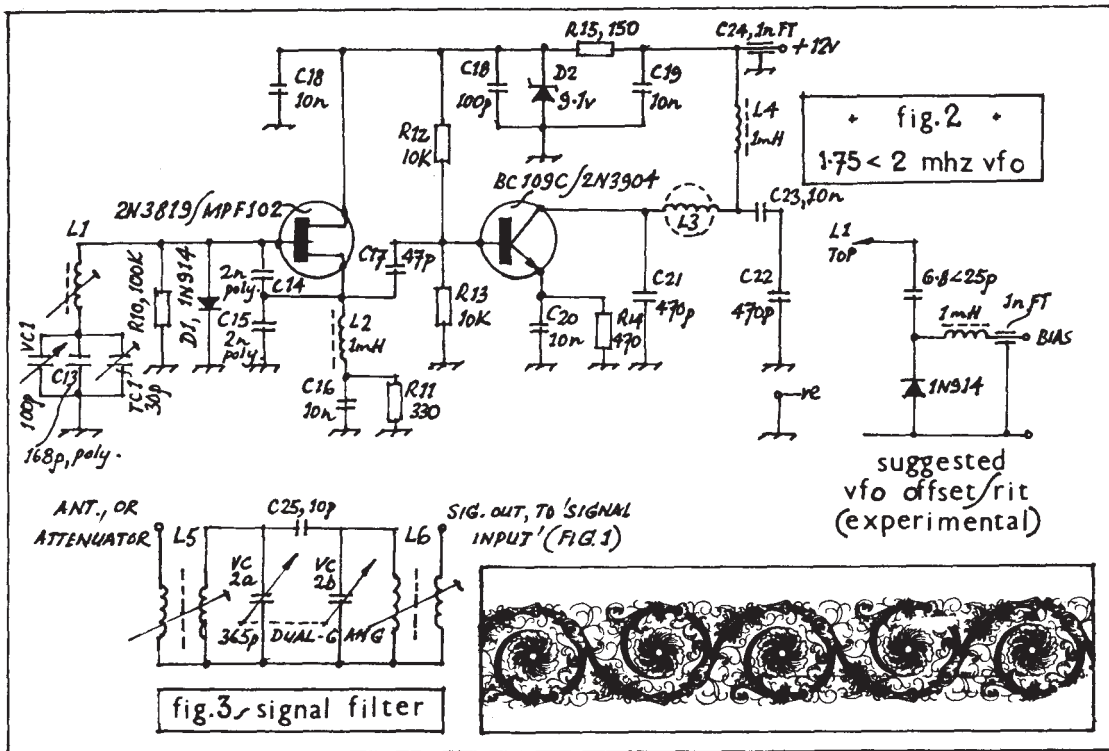


Fig. 2. L1: Cambion 2060-06 (28-63uH nominal)

L3: 24t closewound on T50-2 (Amidon)

L2: 1mH RF Choke

L4: as L2.

Fig. 3. L5: Denco Range 3 Blue (27.6uH nominal, antenna coupling winding).

L6: Denco Range 3 Yellow (27.6uH nominal, interstage coupling)

NOTES ON THE TOP 'N EIGHTY RECEIVER BY G4LEG.

Construction:

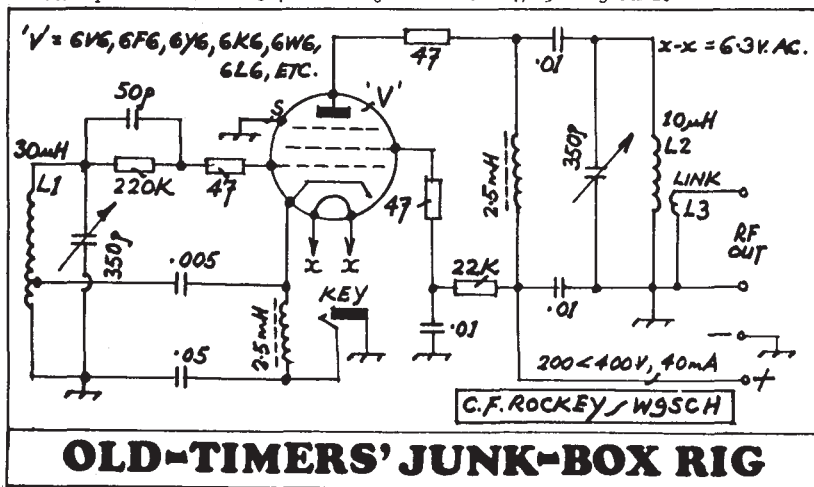
- 1) VFO: build in separate shielded box, screened output.
- 2) Mixer/Audio: If on same PCB, use guard strip under T2, observe symmetry on VFO feed to aid balance. Audio stages are high gain so use good layout.
- 3) RF Filter: Use reduction drive on VC2, 80m breakthrough results if not correctly peaked on 160m, To align: adjust cores with VC2 fully meshed, for peak noise, or use signal source.

Operation:

VFO is fundamental for 1.75 to 2.0MHz; VC2 peaks 2/3 to 1/2 open for this band. VFO second harmonic used for 3.5 to 4.0 MHz, VC2 peaks about 3/4 open for 80m. For transceiver use, key 12v to mixer/AF in receive condition. For separate use, wire 12v to mixer/AF; use RIT/Offset. Zerobeat with station, offset RIT for beat note, Return RIT to zerobeat to net TX.

Audio Filter:

0.22uF across phones socket after C11 peaks at 800Hz with S.G.Brown phones. Use 88mH parallel with 0.47uF from junction of C7/R3 to ground.

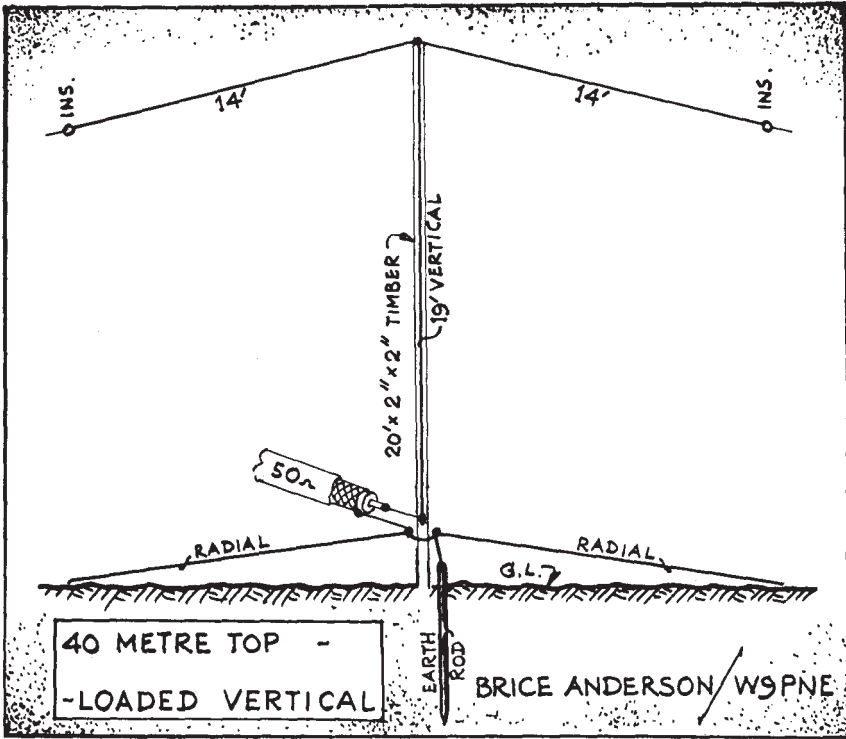


OLD-TIMERS' JUNK-BOX RIG

This little rig puts out about five watts, and was built from my junk box. Unlike the typical simple oscillator, this rig is really two stages in one set of tube elements: a triode Hartley oscillator and a tetrode multiplier. It is thus more stable and more isolated from load variations than the simple oscillator would be. The Hartley oscillator is tuned to 160 metres and the output is tuned to 80 metres for best output. An antenna tuner is recommended for increased harmonic attenuation. This rig puts out a very stable signal if it is built sturdily. Use a well filtered power supply of about 350 volts at 40mA, for five watts out.

I would like to hear from anyone who builds this little rig.

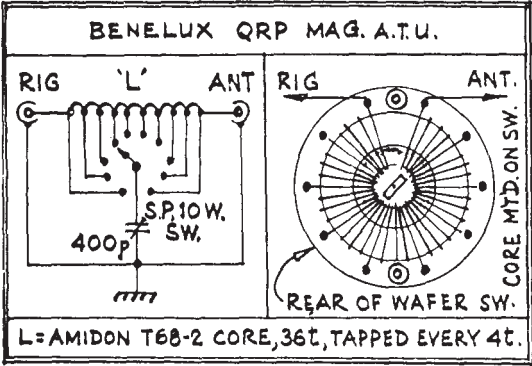
- V1 - 6V6, 6F6, 6Y6, 6X6, 6W6, 6L6, or use what you have.
 - L1 - 30uH. 35 turns of No. 20 AWG on a 2 1/2 inch former, tapped 7 turns from ground.
 - L2 - 10uH. 10 turns of No. 20 AWG on a 2 1/2 inch former.
 - L3 - 1 or 2 turn link over the ground end of L2
- Resistors are all 1 watt carbon. Fixed capacitors are either mica or ceramic. L1 and L2 should be mounted at right angles and six inches apart. Nothing is really critical, use what you have but build it sturdily!



A vertical antenna can be much less than a quarter wavelength in height and still be effective if a wire top hat is used. The design given here is for about the shortest vertical section and longest top hat section that can be used without losing efficiency.

As with any vertical, an extensive radial system is required for maximum efficiency. However, I had good results with one ground rod and two 33 feet radials of vinyl covered wire laying on the surface of the ground around the house foundation. The SWR was about 1.7:1 at resonance.

The two top loading wires must be trimmed equally until resonance is obtained at different frequencies. I used a 20 feet wooden 2 x 2 inches to support the vertical on the side of the back porch. The antenna was made with size 18 wire.



A variable coil for a QRP tuner with QRP dimensions. This tuner is good for tuning long wires, greater than a half wave. The coil is mounted on the back of the switch as in the drawing.

Translated from Dutch by G3VTT.

The Bobtail Curtain Jim Fitton W1FMR

The simplicity of The Bobtail Curtain, described by Woody, W6CBX in "Ham Radio" (Feb/March 1983) prompted me to try this very interesting antenna. The two element version was chosen to fit the small size of my city lot.

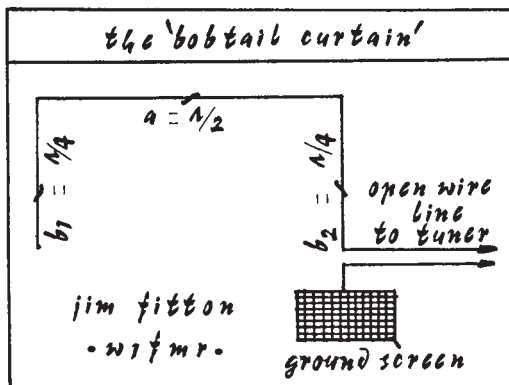
The Bobtail, basically an inverted ground plane, operates with the maximum current node near the top. This tends to reduce currents flowing through the ground, therefore ground losses will be held to a minimum. A small ground screen is all that is needed, and connection to the ground itself is not necessary.

The radiating part of the antenna, being up high, provides a lower angle of radiation for DX work. Theoretically, the radiation patterns will be broadside to the array but, from my experience, the highest Bobtail always seems to work best, regardless of orientation.

The antenna is made from a single length of wire, and exact dimensions and shape do not seem too critical. Use the following formulas:-

General A = $473/f$ B1 and B2 = $225/f$
My antenna $473/7.025 = 67.3$ ft and $225/7.025 = 32.0$ feet (see figure below).

In my case, vertical element B2 is about 8 feet longer to allow entrance through an adjacent window. The ground screen is a piece of hardware screen or cloth ($\frac{1}{8}$ or $\frac{1}{2}$ inch mesh) about 4 x 5 feet with a length of heavy wire soldered to it for a ground connection. Both the antenna wire (B2) and the ground connection go through the window to an antenna tuner located on the inside of the window sill.



From:
QRP Quarterly

If you think of the Bobtail as being only a terrific DX antenna, you are missing half of the fun. Using the antenna as described, cut for 40 metres, and with a simple tuner (QST, February 1980, page 22) the following were worked during the Fall 1983 QRP ARCI QSO Party:-

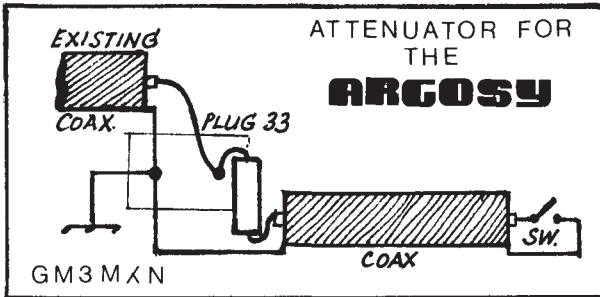
- 80 metres - 23 QSOs to 10 States
- 40 metres - 24 QSOs to 11 States and 1 DX country
- 20 metres - 57 QSOs to 24 States and 2 DX countries
- 15 metres - 57 QSOs to 17 States and 5 DX countries
- 10 metres - 11 QSOs to 2 States and 4 DX countries

The big surprise for me was on 20, 15 and 80 metres. Many stations commented on the strength of my signals.

Here are some of the references, other than those already mentioned :-

1. A.R.R.L. Antenna Anthology, page 81
2. A.R.R.L. Antenna Handbook.
3. C.Q., March 1948.
4. Ham Radio, July 1969.

If there were a prize offered for the shortest, simplest, most efficient all band antenna, I'd bet my money on a Bobtail Curtain.



ATTENUATOR FOR THE ARGOSY By Tom Sorbie, GM3MXN

I found that I had great trouble with cross modulation on 40 metres, and after some thought, I came up with this modification.

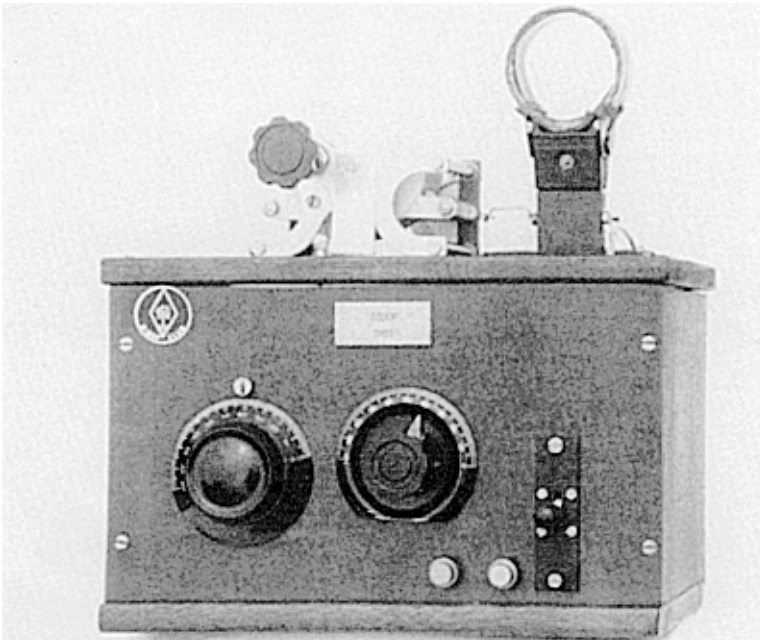
The purist may not agree with the method, but it works, cutting down the signal and curing the cross modulation.

Locate plug 33 or 34 (33 is on RX Mixer Board) and connect a 150 ohm resistor to the inner of the coax at plug 33. Then run a small length of coax to a switch, (I use the spare NB switch). You now have an attenuator of around 20dB.

Another Vintage Valve Transmitter

Remember the vintage transmitter by G4DWW that won the G4EZF Trophy featured in the last issue of SPRAT?

This fine transmitter by John, G3DOP, shows why the competition was so very difficult to judge.



A SPRAT Photo Report



TOP: A rare picture, believed to be the only one, of the founder members (001,002&003) of the O dBW Club. L to R: GM4HGB, GM3OXX and GM3RKO.

RIGHT: Derek, GM4CXP, who did a remarkable 160 mile round cycle journey to attend the meeting of club members in Edinburgh.

BELOW: The line up of G QRP Club members at a meeting held at the University of Edinburgh. The host was GM3OXX. A great evening at which GM3RJV spoke to the members in a question and answers session.



G QRP Club in Scotland

Do you know that Scotland has more holders of the Milliwatt DXCC Trophy than any other country outside of the USA? So it was with awe, the G3RJV family sojourned north of the border to combine a little QRP Club visiting with a holiday in June.

The first weekend was spent at the QTH of George, GM3OXX, who arranged a meeting of local QRP Club members at the University of Edinburgh. During the weekend G3RJV came to understand something of the 0 dBW Club, an aesthetic order which strangely links a pink pig with a standard of power measurement using a particular bulb. The new GM3RJV attempted to gain entry by assault; suggesting that the standard of measurement was too subjective and ought to include use of a Grease Spot Photometer, with all power measurements in Lamberts. He failed!

Following a pleasant and sunny period of wandering through the centre of Scotland, the G3RJV family ended their visit by calling upon Ronnie, GM4JJG, in his QTH at Gourcock. A canny Scot with considerable skill in building radios and clocks.

It must have been a good trip because G3RJV returns to Scotland on September 8th to speak at the Scottish RSGB Convention.

BELOW: Could it be.....No!well look at the guilty GM3OXX glance... the disapproving GM3RKO expression.
No, none of us can believe that this could be the secret George Burt Linear, but how else can he do it?



VK2VVA/VK3PGE/QRP
 VK7V/VK508/QRP
 VK4APN
 VK2AKE/QRP
 KX6GO/QRP
 VK5ZF/QRP
 VK1ZIQR
 LXA
 ZL1LW/QRP
 G8W6

VK VERSUS 1984 THE WORLD

Sponsored by the CW OPERATORS QRP CLUB, this contest is directed to all CW enthusiasts WORLD WIDE who elect to tackle that extra challenge. Contestants may work DX or OWN COUNTRY for scoring. QRO stations are invited to participate, but must submit contest logs with QRP STATIONS ONLY, to qualify for the QRO section of the contest. QRP Stations must sign QRP for identification.

DATES SATURDAY NOV 17 and SUNDAY NOV 18 1984

DURATION Total of 48 hours (0000Z Nov. to 2400Z Nov.)

MODE CW only. CONTEST CALL CQ QRP. BANDS 160M to 10M. (Not WARC)

SECTIONS STATION CATEGORIES

QRP : Single Operator : Multiband or Singleband.

QRP : Multi Operator : Multiband or Singleband.

QRO : Single Operator : Multiband or Singleband.

PERIOD CATEGORIES

Full Period : 48 Hours.

Half Period : ANY 24 consecutive Hours, within the 48 hours allowed for the contest.

EXCHANGE ALL STATIONS SIX DIGITS comprising RST followed by serial number, commencing with 001 up to 999, then commencing again

SCORING QRP STATIONS i.e. indicated output power into antenna NOT EXCEEDING FIVE WATTS, each contact shall score points based on the following table....

Up to 1 watt..... 6 Points

Over 1 watt - 2watts..... 5 Points

Over 2 watts - 3 watts..... 4 Points

Over 3 watts - 4 watts..... 3 Points

Over 4 watts - 5 watts..... 2 Points

QRO STATIONS Using more than 5watts output to antenna.

1 POINT PER CONTACT (QRO/QRP only allowed)

MULTIPLIERS Every contact in a different IARU Zone counts as a multiplier on each band.

BONUS SCORE Field stations using Battery/Solar/Wind/Hand Generated power (Motor Generators excluded): Multiply the grand total score by 1.5. (Station to be erected Not Before the day prior to Contest date.)

CONDITIONS Stations may be contacted once only on each band, in each 24 Hour period. Separate log sheets required for each band. Each logged QSO to show Date/Time (GMT)...STATION WORKED...

EXCHANGE (Sent/Received)... MULTIPLIER...POWER OUTPUT...

POINTS CLAIMED. GRAND TOTAL SCORE = Total points from all bands x Total multipliers from all bands (x Bonus Score)

All entries must have a Front Summary Sheet showing...

Calculation of grand total score: Name and address: Call

Sign: Signature and Declaration... "I certify that all

entries in my contest log sheets are true and honest".

Entrants are requested to include a brief description of

station equipment, and any comments/suggestions. Field

stations are requested to include a brief description of

operations/location/ conditions etc.

CERTIFICATES To the QRP Single Operator and Multi Operator in each Country with the highest grand total score in each section. To the QRO Operator in each country with the highest grand total score in each section.

To the highest scoring CW OPERATORS QRP CLUB member in each

section. Entries to be addressed to, Contest Manager, P.O.

Box 109, Mt. Druitt, N.S.W. 2770, Australia.

CLOSING DATE Contest Manager must have entries by 26/2/85

Mods to the IC-720A for QRP Operation

Brice Anderson W9PNE

I want to tell you how to make a simple modification to the IC-720A to permits its use at low QRP levels. The "RF Power" control normally permits varying the CW RF output from a maximum of 100 watts down to between 5 and 7 watts, depending on the band. With the simple modification here, the low-end output can be reduced to ½ watt.

Remove the top lid of the IC-720A. This exposes the small PCB right back of the "MIC GAIN" control. At the rear of the PCB is a connector with 8 pins. Viewed from the front of the transceiver and looking down, the connector looks like this:

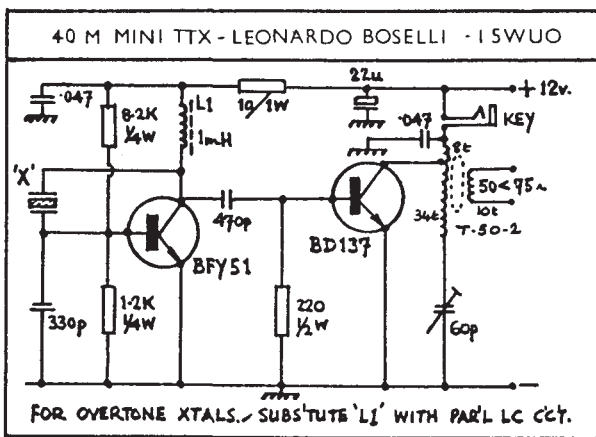


Using a very small teflon covered wire, connect to the terminal with the brown wire, the second terminal from the right hand end, I soldered a short piece of heavier wire to the end of the small wire so that a good contact was made to the pin by shoving the wire alongside the brown wire. Bring the small wire to the front edge and carefully put the lid back in place. Connect a 1000 ohms carbon resistor, ½ watt size, to the wire. Connect the other end of the resistor through a SPST switch to chassis ground.



With the resistor connected to ground, the power output with the "RF POWER" control at minimum is 2 watts. As the control is advanced clockwise, the output drops to about ½ watt before starting to increase again. I do not think it would be wise to try to go above five watts output with the resistor connected.

Another way of doing this would be to use a resistor of about 1200 or 1300 ohms so that the output would be about four watts with the control at minimum. Or the resistor could be selected to give any desired low end output. Since I like to operate with an output of one watt, the resistor value I indicated is right for me. Of course, normal operation is restored by opening the switch.



The PW DART as a Transceiver

Ron Marshall G4GIQ

The PW Dart 160m DSB transmitter (Practical Wireless magazine: Nov. 1983) is a version of the BREN Transmitter by G3VIT (SPRAT 28 and G QRP CLUB CIRCUIT HANDBOOK). G4GIQ added receive circuitry to convert it into a direct conversion transceiver.

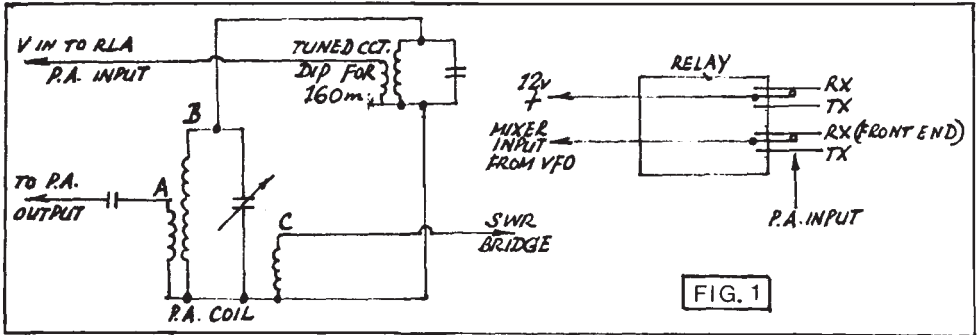
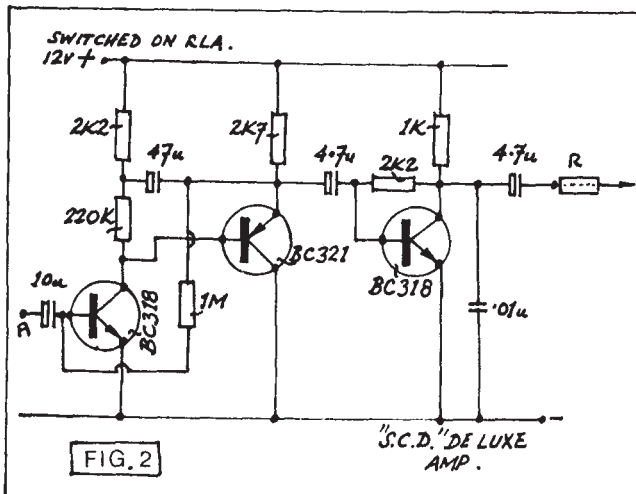


Fig.1. shows the receiver input tuning circuit and the switching used for transceive functions.

Fig.2. shows the AF preamplification stages, based upon the SCD Deluxe amplifier from Short Wave Magazine.

Point "A" goes to the centre of the DSB/CW switch on the Dart.

Resistance "R" may be required to reduce amplifier gain, the prototype used a value of 220K.



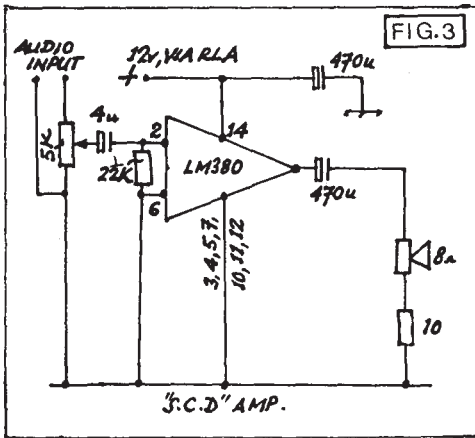
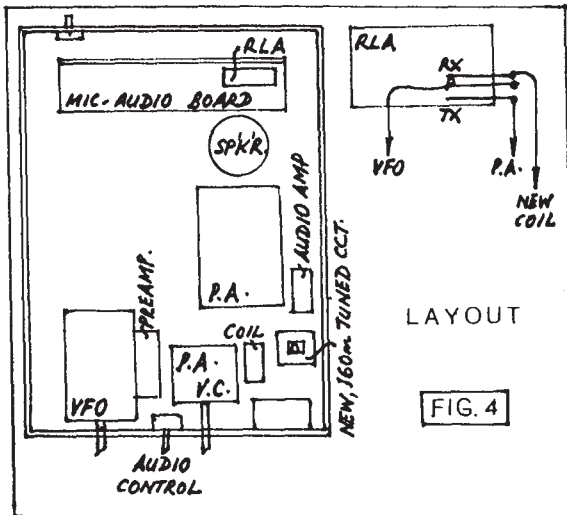


Fig.3. shows the LM380 audio output stages

Fig.4. is the layout adopted by Ron for his transceiver.

The completed transceiver obviously works well as Ron records a log for one evening of G130QR, GM4UYU and G3RPD (Devon), all worked from Northwich in the centre of England, using a random length of wire.



LAYOUT

FIG. 4

Contests

QRP AMATEUR RADIO CLUB INTERNATIONAL CONTESTS

The results of The ARCI 1984 Spring QSO Party have been received, and the "milli-watters" have really stolen the show. Overall winner was Roger, W5LXS with 708,660 points, runner up was Zach, KH6CP/3 with 642,960 and third was Chris, G4BUE with 630,000 points, all running less than one watt output. Fourth was N4BP with 561,960 who was also first place in the non-milliwatt class. It is nice to note that W5LXS, KH6CP/3 and G4BUE in addition to being members of ARCI, are also members of G-QRP-C.

The rules for The ARCI 1984 Fall QSO Contest have also been received and all Club members are invited to take part. Activity on the HF bands is high, and the contest is an excellent opportunity to work two-way QRP across the Atlantic.

1200 GMT 13 October to 2400 GMT on 14 October. Only one mode of operation which may be either SSB or CW, but operators must keep to their chosen mode! Exchange RS(T)/State, Province or your country/and ARCI membership number. Non members give their output power. Stations may be worked once per band for QSO points, and each QSO with a members counts 5 points, QSOs with non members count 2 points if in the same continent and 4 points in a different continent. The multiplier is based on the output power and is as follows:- x 2 for 4 to 5 watts CW or 8 to 10 watts SSB; x 4 for 3 to 4 watts CW or 6 to 8 watts SSB; x 6 for 2 to 3 watts CW or 4 to 6 watts SSB; x 8 for 1 to 2 watts CW or 2 to 4 watts SSB and x 10 for less than 1 watt CW or less than 2 watts SSB. There is a bonus multiplier of x 2 if you use solar power or other natural power and x 1.5 if you use battery power. The total score is the sum of the QSO points multiplied by the total of States, Provinces, Countries multiplied by the power multiplier multiplied by the bonus multiplier, if any. Suggested activity is on the international CW and SSB QRP frequencies, excluding the new bands.

Logs (separate for each band) to be received by 12 November and to be sent to QRP ARCI Contest Chairman, Gene Smith KA5NLY, 8201 Chatham Drive, Little Rock, AR 72207.

DL AGCW STRAIGHT KEY (HTP) CW CONTESTS

Dates: 7MHz Contest 6 October 1984 3.5MHz Contest 2 February 1985

Keys: Straight keys only, no bugs, keyboards, etc.

Mode is cw and the times are from 1600 to 1900 GMT.

Exchanges: RST/three figure serial/name/age. Ladies may substitute "XX" for age.

Scoring: 1 point for each QSO. Stations may be worked only once.

Logs must include a signed statement that only a straight key was used. Send them to DF10Y, Mallinckrodstrasse 52, D-4790 Padeborn, West Germany by the last day of the month. The contests are open to all amateurs and SWLs. Those with ten or more QSOs may nominate one other operator as an outstanding cw operator, and he will receive a bonus of ten points.

Rules for 1984 HA-QRP Contest

Date & time: 1st Nov, 00hrs, to 7th Nov. 2400hrs. Freq: 3.5 - 3.6MHz.
Mode: cw only. Call: CQ TEST QRP, Exchange: Callsign, RST, QTH, name of operator. Score: Own country - 1 point, Other countries - 2 points, Multiplier - sum of points multiplied by number of DXCC countries worked. Categories: Single-operator, multi-operator. Power: PA of tx to have less than 5 watts input power. Logs: to contain - date and time of contacts, (time difference not more than 3 minutes between the two stations), callsign, QTH and name of operator worked, type of active element used for PA. Entries to: Rádiótechnika szerkesztősége, Budapest, Pf. 603, H-1374, Hungary, postmarked not later than 21st November. Awards: all contestants receive a certificate, and the top entry from each country a year's free subscription to Rádiótechnika.

Awards

A.D."Gus" Taylor, G8PG. 37 Pickerill Rd. Greasby, Merseyside, L49 3ND.

G3IQF WINS HARD FIGHT FOR THE 1984 G2NJ TROPHY

Entries received for The 1984 G2NJ Trophy were of a very high standard, and the judges had an extremely difficult task in deciding on the winner. Eventually the choice fell on Bob, G3IQF, who submitted an excellent log of QRP DX worked from a very difficult location (centre of an industrial estate) with very simple antennas. The award of the Trophy is a fitting reward for his years patient and enthusiastic QRP operating under difficult conditions. Runner-up Certificates went to F9YZ and KH6CP/3, who submitted excellent logs, as did all the entrants. Judging is now becoming so difficult that it maybe necessary to modify our approach to this part of The G2NJ Trophy, perhaps by introducing a new trophy restricted to those who do not use beam antennas. Your Committee are currently considering this matter.

CONGRATULATIONS TO THE FOLLOWING :-

QRP WAC: HB9XX

QRP COUNTRIES: 100 G4JFN

WORKED G-QRP-CLUB: 260 (!!!) GM30XX; 200 G4BUE; 120 GM4ELV; 100 ON5AG; 40 HB9XX

TWO-WAY QRP AWARD: 10 WB2RZU and HB9XX

WELL DONE SUE, G4WGY - first YL to win a CW Novice Award (Class B). Who will be the first YL to do it on QRP?

HIMSELF DOES IT AGAIN! Congratulations to our worthy Chairman, Gordon G3DNF, who not content with winning The Summer 1983 AGCW-DL QRP Contest, also won The Winter 1984 event! Other members in the first six were G8PG (3rd), GM30XX/A (4th) and G4BUE (6th).

Silent Keys

GW3SWQ: We regret to announce the death of Alan at the age of 61. Alan always considered home construction as the backbone of the hobby. In a moving letter, his wife, Jean, tells me she now wishes to take the RAE to obtain a licence and maintain their amateur radio freindships.

G2UV: G2 "Uncle Vic" was a well known old call and had been a member of the club for some time. I was very pleased to see some of his equipment on display at the Chalk Pits Radio Museum during my recent visit.

G5IC: Larry was an early member of the club and I was very sorry to hear of his death in a letter from his son. Larry has contributed to SPRAT and in his latter years did extensive studies of antennas. As a widower, his latter life was devoted to his hobby.

Ads & Odds

SWOP: I would like to swop an Hitachi Stereo Cassette Deck, Wye MW/LW/VHF Stereo Tuner and Rotel 120 watt Stereo Amplifier for an HF QRP transceiver. I normally use 7/14 but would also like to try 3.5/10MHz - any of these bands would be fine, as would a CW only rig - ssb would be an added bonus. Due to unemployment only about £10 could be offered in addition to the above equipment which is in first class condition. Bob Egan, G4XOM, 56 Walker Ave. Stourbridge, West Midlands. DY9 9EL.

TWO METRE CW WORKING CHANNEL: Tony, G4FAI, has been trying cw on 2m and has been surprised at the amount of low power activity, although few seem to be members. At present we have no calling channel, Tony suggests 144.060. What do others think - work Tony and tell him - write to G8SEQ with your views.

WANTED: HW8 by new member about to seek Class A licence. Mrs Elaine Green, Chylean, Penpethy, Tintagel, Cornwall.

ANTENNA CORROSION AND SEA WATER: Has anyone any experience of the problems of high winds and salt air on antenna construction and wires? If so, Elaine, see advert above, would like to hear from you.

S.S.B. Ian Keyser G3ROO Rosemount, Church Whitfield, Dover.

Found, a batch of letters forgotten in the last issue! Anyway, more of that later after report on the sked.

It seems as if this is a success although I have not been able to get on as often as I would have liked, due to the good weather and the necessity to get the outside of my house finished before it breaks. Not only has the sked attracted members on the air, but also non members have been joining in one of those being David G4KYX who should soon be with us!

A report from Brian G4DYF feels that this net fills a long felt want however he wonders about the winter if it moves to 1800 clock time. I think that it should be 1900 clock time also and will be asking for your comments on the air.

Now for the overdue letters.... sorry gents, I pinned these to my notice board and they got covered up.

A long letter from Ken GM4JMU reports little activity on the air but a lot of activity with the soldering iron playing with VMOS devices with interesting results.

A letter from Bob G3IQF reports on the disaster of August the 26th, the short Contest. The only station he heard was myself signing FØHZZ and we did not QSO as I did not hear him. In the EU Dx contest he did considerable better working SSB to all continents except EU! to complete the sextet he had to go on 14,060 and work Ben CT4CH on the key.

A sour note Bob raises is the 28,885 calling frequency which has been hit by the 50MHz boys. Many times I have explained that this is the international QRP frequency and it would be appreciated if they could shift a few KHz as frequency netting is important to enable us to fine each other but to no avail. On one occasion the operator then switched his non linear on and completely ruined my QSO. Bob has mentioned it to Colin for WQF to look into but nothing yet on that.

The final letter is from Dave GM4ELV to say that has started on the saga for the 5 band WAC and that he has got an ARGO 509 and having a ball with it. Hope to hear you on 80M net soon then Dave.

Well, that's all for now

73s de 'ROO

STOP PRESS

Ted G2HKU and Colin G3VTT worked T77c on SSB (not bad to think they hate microphones)

DAILY QRP CLUB S.S.B. SKED: 3690KHz + QRM at 1800 GMT. Station to listen for include: G3ROO, G4BQV, G4HOM, G3VTT, G4DYF, G4PUU, G3MJW, G3OVJ and sometimes G3RJV.

A New Transceiver Kit.....

We were talking to WPO Communications about multiband QRP transceivers at the RSGB National Convention and they are coming up with the goods.....

Some news has reached me of a new kit project which they plan to release towards the end of 1984. A CW only QRP Transceiver capable of operation of six HF bands. The transceiver will be direct conversion, crystal mixed onto the required bands, with a standard 11 pole, 500Hz, L/C Filter. It will be semi-breakin and have RTT. The transceiver may be capable of a maximum of 10 watts of RF but will have a genuine very low power capability for the milliwatt. The basic transceiver kit for one band, including all hardware, will be in the £50 range. This basic kit will have add-on band sections upto a total of six bands in the same case. The full six band version should be under £100 in complete kit form.

.....if it turns out like this early news suggests, its going to beat the pants off the new HW-9! Watch this space! G3RJV.

Members News

Chris Page, G4BUE, Alamosa, The Paddocks, Upper Beeding, Steyning, West Sussex.



The last of my photographs from Texas shows me operating the Argosy in the shack of Fred, W5QJM. At the time of the photo, I was in QSO with KA1GPG, who was also running QRP, and was trying to puzzle out why I was signing G4BUE/W5.

After the very successful N.E.C. week-end, the social side of the club has been continuing. Visits here have been made by Leo, KC5EV and Sharon, and more recently George, G3RJV and his family. George and I visited The Vintage Wireless Museum at Amberley in West Sussex, where Ron Ham gave us a conducted tour and club member G3WNU allowed us to look after the demonstration station, GB2CPM, while he went and had a cup of tea. When Jerry came back he was surprised to see us working QRP with club members GM4JJG and F6FZL in the log.

This last week-end saw Ade Weiss, WØRSP, staying here, and on the Saturday we had a QRO style party for him. Seven members stayed overnight, and we all went to The

Vintage Wireless Museum the following day, where Ron Ham again gave us a very good conducted tour. The party was a re-run of two week-ends previously when we had another party here. Unfortunately the 'star' did not turn up! Poor Ade, he got his dates confused, but he made up for it during the last week-end. Ade presented The G2NJ Trophy to Bob, G3IQF and G4JFN was able to hand his QRPP DXCC application to Ade personally. Many members homebrew rigs were demonstrated including a 14MHz TCVR from G3LDO (on which we managed to work LU), a portable 14MHz TCVR of Ade's on which we worked club members GM4OSS and SM4FPF, and an IC transmitter for 7MHz from G3IQF. G3VTT bought his 3.5MHz receiver with 1.8MHz converter. The house seemed very quiet on the Monday after I took Ade to the local railway station to return to his research in London. Those members present over the two parties, not mentioned above, were G4GIK, G4LJU, G3YHM, G3WBO, G4JCY, G3WWS, G3LDO, G4UYA, G2HKU, G4JBL, G8TOZ, G5RV, G4LQF, G4HOM and Short Wave Magazine Editor, Paul G3KFE.

The TOPS CW Contest on 1/2 December now has a QRP Section (up to 5 watts input). 3.5MHz only and the rules the same as for QRO stations. Logs (by 31 January) to SM3VE. The HA QRP Contest is again being held this year from 1 to 7 November. Also on 3.5MHz, it is cw only, and exchange is RST/NAME/QTH. QRP is defined as 5 watts input, and your score is made up of 1 point for QSOs with your own country, and 2 points for others, all multiplied by the number of DXCC countries. Logs to be sent by 21 November to Radio-technika szerkesztotosege, Budapest, Pf.603, H-1374, Hungary.

An interesting QSO took place recently on 144MHz. Bob, G4JFN, whilst on holiday in North Wales was able to access one of the EI repeaters, resulting in a three way QRP QSO with club members G14MBO and EI2AG. GM3OXX has also been on holiday, in Rosshire, and been working /P. He found that being surrounded by 3000 feet high mountains tended to absorb his RF! W1FMR reports on his trip to the U.K. this Summer and mentions the highlight as being a visit to George's QTH and operating his all homebrew station. On a different tact Jim has asked me to mention that he is planning a DXpedition in 1985, something cheap and to combine with the annual holiday. The emphasis will be on QRP /P operation and asks for interested members to get in touch with him.

W6SKQ has been out on Field Day with KF6BC and experimented with long wire antennas, which he says are very quiet. On a personal note he mentions QSOs with CEØ, T7, VP2V, HL, UB5, CX and ZL8. Bob will be signing W6SKQ/1 from Rhode Island during The Winter Sports this year. Phil, G4RVW has sent details of his recent visit to Germany and to Munich in particular, where he met DL7MAM, DJ1ZB and DK3YH. Further details in a later Sprat. G4PKW is another member who took a rig on holiday. John took his PW7 to Scotland and worked Europeans including USSR. G3IQF recently worked a CE station during the WPX SSB Contest, whilst he was operating from his car. QRP and /M - good going Bob.

CT4CH has been QRV as SM6YF/MM from the begining of June until the middle of September, when Ben will be back at his normal QTH. W9PNE was wor'ing with 250mW during the WPX

CW Contest and was very pleased to work HZ on 21MHz. Brice also worked a KH6 on 7MHz. G4EBO reports two-way QRP QSOs with VK7VV and 7X2FK, and Zack, KH6CP says that he has now worked more countries with 1 watt from his /3 QTH in PA than with 5 watts from his KH6 QTH. Who says that a good call sign makes QRPing easier?

Those of you who have difficulty in obtaining components for the circuits in Sprat may be interested in the following. Club member Chick Tutt, G8TOZ (6 Dunster Close, Brighton BN1 7ED), runs Tutt Radio in Brighton and keeps a good range of components required for club projects. He will do mail order for members and if he has not got what you want in stock, he will get it for you. A very good friend of mine, Dennis Andrews G3MXJ, has just quit his job with IBM and has opened Sussex Micro and Audio Centre at 11 Junction Road, Burgess Hill, West Sussex, under the Tandy name. Dennis stocks the complete Tandy range and will do mail order for club members on anything from the Tandy range, post free over £10, otherwise 50p. If you have not got a Tandy catalogue, a SAE to his shop will bring you one. Dennis will also be pleased to see any members who call into his shop.

Homebrewing is still very much alive and kicking in the Club, with OXO's being one of the favourite rigs. GW3YDX has worked the USA and UA9 with his half watt on 14MHz, and I have used the design as the basis for my "suitcase rig" entry. G4XOM is building a FOXX for 10MHz, and G3YYF who retired in January thought he was going to do a lot of building until Reg found that he was busier than he was at work. I have heard that said before!! G3KRR has been working around Europe with his half watt 80m rig, and Cedric was also able to exchange his TS120 for a HW8 as a result of the request in Sprat (the system works!). G4SPZ has an all homebrew station on 80 metres, running 600mW, with all the circuit ideas coming from Sprat. DF10Y has built a STX, which with his Drake receiver he has used to work members on 7MHz. Fritz is only able to use 10 metres of wire at 4½ feet above the ground as he lives in a cellar flat!! G4EHT has also built the STX, and worked GM3RKO with it. Bill has also just finished a TCVR based on the SCD De Luxe.

Petr, OK1DKW took part in The May Day QRP QSO Party and made 87 QSOs, whilst Gordon, G3DNF did not do as well describing conditions as "rough". Petr operated /P recently near the SP border with his TOT 30 and PA. He is currently rebuilding his main TCVR changing the valves for modern techniques. HA7ZX hails from Budapest and during last winter worked 36 countries on 3.5MHz with his homebrew 2 watts rig. Jani will be QRV during The HA QRP Contest, described earlier.

A nice letter from David, G4YVM, which should give some encouragement to others. He says he is ex G8YJI, and once he decided to get down to the cw, he got a copy of the Club's cassette tapes. Ten weeks later he passed the morse test, but as he is a student with no money, he set about building transmitters. He is now QRV working members, and having a ball, and says that he would like to encourage those members who say either "I cannot pass the cw test" or "I cannot afford a HF transmitter". He has done both, well done David.

The new Ten-Tec rig mentioned in the last column has turned out to be The Century 22, with power up to 60 watts CW only (sorry Ian!), 80 to 10 metres, DC receiver. It is listed at 390 Dollars in the U.S. (which at the present rate of exchange will probably mean at least £390 in The U.K.).

Those members in the south-west of England are reminded of The QRP Convention in Taunton on 13 October, which was mentioned in the last RadCom. Several members have said they intend going, but to date no details of the programme have been received. I maybe going, but it is doubtful at the moment. Details can be obtained from G3GC, QTHR.

My 1985 trip to The U.S.A. will be sometime between 1 April and 30 May, but will take in both the Dayton Convention on 26/28 April and The F.O.C. Dinner in CT on 5 May. At the time of writing tentative plans are being made for some sort of QRP "shindig" at Dayton, so USA members may like to make a note of this. The ARCI are trying to organise something, and Ade Weiss, W0RSP has said that he intends going, as has W5LXS. The bad news is that I shall not be able to take Pam and the boys with me (due to the falling Pound against the Dollar), but the good news is that Colin, G3VTT could be coming with me. Colin and I would like to hear what other amateur radio conventions, hamfests, club meetings, etc will be held during the period April/May 1985, so we can gauge the best time to come. We shall try and make it a minimum of four weeks.

Let me know how your Autumn goes, by 20 November please. Any letters not acknowledged in this column (due to the earlier deadline) will be carried over to the next issue.

Best 73 and good QRPing,

Chris Page

CLUB ITEMS FOR SALE

PRINTED CIRCUIT BOARDS AND BADGES:

Please note that the stockist for BADGES as well as club PCBs is now:
Mick Hodges, G4OPE, 51 Carnford Rd. Sheldon, Birmingham. B26 3AG.
(the truth is that it is really his wife, Lynn, who does it all!)

BADGES:

LAPEL BADGES (metal) 1" dia, club logo in silver on black. 70p (£2.00)
CALLSIGN BADGES, as above but with callsign engraved on base bar.
please order with callsign clearly printed (slight delay) £1.50 (£3.00)
KEYFOBS, Leather with metal insert of club logo 75p (£2.00)
BADGE INSERTS, 1" plastic disc with club logo in silver on black,
ideal for sticking onto equipment. 20p (2 for £1.00)
Postage rates: add 20p upto 3 items. Dollar price includes postage (surface)

PRINTED CIRCUIT BOARDS:

The following are available with circuitry and layout drawings:

THE S.C.D. TRANSMITTER BOARD. £1.00
A simple transmitter (xtal) for 80/40/20 from Short Wave Mag. by G3RJV.
THE S.T.X. TRANSMITTER. 0.75p
about the simplest possible HF xtal transmit board by GM30XX from SPRAT 35.
THE FOX3X TRANSCIVER BOARD 0.85p
Ultimate 'fun' rig by GM30XX, SPRAT 35, on 2"x2" PCB.
WARC CONVERTER BOARD £2.15
Receive converter for 10/18/24MHz (to 14 and 29MHz) by DJ1ZB from SPRAT 35.

* * * * *

QRP CW CALLING FREQUENCY CRYSTALS:

The following are available in HC25U mountings:
3560, 7030, 14060, 21060, 28060 KHz (upto 12MHz in fundamentals)
Other 20m CW frequencies: 14030, 14040, 14050KHz
All at members price of £3.50 each inc postage and VAT, from:
P.R.GOLLEDGE ELECTRONICS, MERRIOTT, SOMERSET.

* * * * *

G QRP CLUB LOGO SETS IN WATER SLIDE TRANSFERS:

A very smart way to put the club logo onto equipment. 20 club logos in two sizes in gold on black. £1.25 inc postage.

RADIO LEGENDS IN WATER SLIDE TRANSFERS:

Add that finishing touch to equipment with scratch proof lettering. Most common amateur radio legends available on a A4 sheet. £1.25 inc postage.

John Kaine, G4RKP, 74 Camden Mews, London. NW1 9BX. (Cheques to John Kaine)

* * * * *

A FEW TOP BAND CW CRYSTALS ARE LEFT:

1843.20KHz, useful clear channel at £1.50 ea (20p post) from G3RJV.

* * * * *

Cheques for all the above, except Golledge Crystals and Water Slide Transfers, should be made out to "G QRP CLUB".