SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED·TO·LOW·POWER·COMMUNICATION

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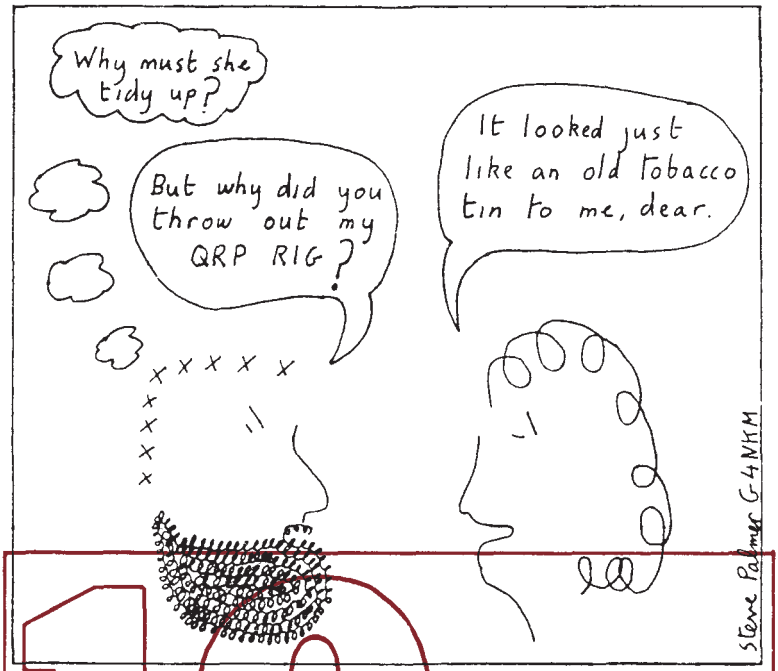

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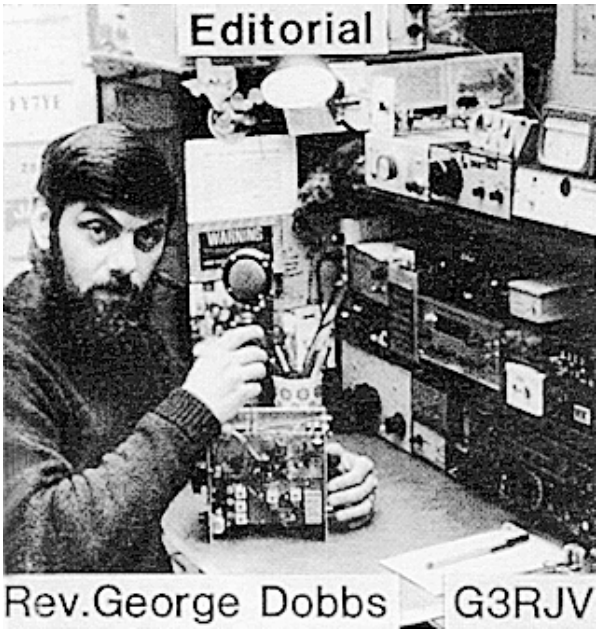
TSC MkI TRANSCEIVER - BIKE LAMP TRANSCEIVER - 2M CW/FM TRANSMITTER
VHF, SSB, AWARDS, MEMBERS NEWS - CONTESTS - RSGB CONVENTION 1985

.....THREE TRANSCEIVERS AND TWO TRANSMITTERS IN ONE ISSUE !

10TH YEAR

JOURNAL OF THE G QRP CLUB

Editorial



Rev.George Dobbs G3RJV

St. Aidan's Vicarage,
498 Manchester Rd
ROCHDALE,
Lancs,
OL11 3HE.
Rochdale [0706] 31812

Dear Member,

This is the second of our "new look" issues of SPRAT. Next issue we may try another typeface to arrive at the best final finish. Your comments are always welcome.

I hope to be able to meet many members at our stand at this year's RSGB Convention. The stand will be smalller than last years because we now have to pay for our stand space, but if you are at the NEC, please call into see us. The centre pages show that the social life of the Club has continued during the winter. In addition to the members who called to see me after Christmas in the centre pages, I was very happy to receive a visit from Bill Robinson, P29BR, on leave from his home QTH in Lae.

The Radio Rally season is almost upon us. I hope to squeeze in time to attend some of them in the north west, and hope to meet a new circle of Club members as I attend some of these events for the first time.

Don't be daunted by the poor HF band conditions, move down the bands. I have heard more QRP activity on 40/80 metres this quarter than for a long time. Stay active and try calls on the calling frequencies,

73 fer nw,

Subscriptions

Renewals (rates: £4.50 or $10 US to Alan Lake, G4DVW, 7 Middleton Close, Nuthall, Nottingham, NG16 1BX. PLEASE QUOTE YOUR MEMBERSHIP NUMBER. Cheques: G QRP CLUB. A reminder should appear in membership number sequence on the address label of SPRAT. Please ignore the reminder if you have already paid. Overseas members might like to pay by direct transfer from their bank to: National Westminster Bank plc, Town Hall Square, Rochdale, Lancs, OL16 1LL. Account: G QRP CLUB. No: 04109546. Please inform G4DVW whenever such a transfer has been made.

A BI-DIRECTIONAL MIXER

By Mike Koblic GW4GIU

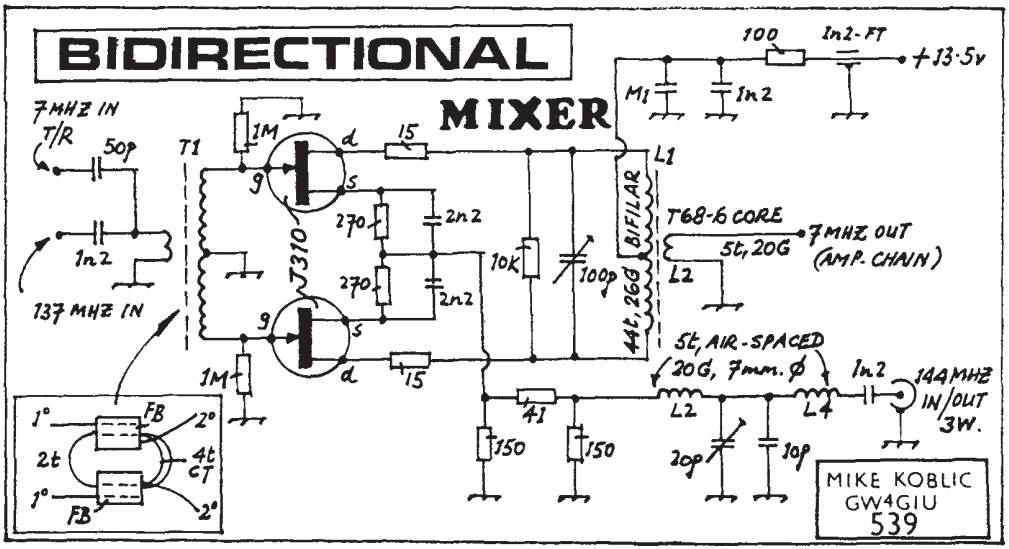
The nucleus of my station is an IC202 with three converters for 14, 21 and 28MHz, and a separate homebrew transmitter for 14 and 21 MHz. I have recently been successful with a transverter for 28MHz, which enabled me to work Europe on SSB and 3B9FK on CW with one watt out. I then decided to try and extend my range to the lower bands.

In the process I got interested in building a bi-directional mixer. The ideal choice is, of course, the SBL-1. However, like you, I believe that part of the art is building cheap, preferably junk box equipment, and to my mind the SBL-1 hardly fits the bill. I tried various combinations of diodes and home-made transformers, but with disappointing results.

I decided to abandon this approach and return to the more tested approach with two balanced FETs (picked up in handfuls at rallies). The result is shown in the diagram. The two 15\ resistors in the drains have been drawn in as an afterthought - insurance for stability. The 6dB pad is needed to reduce the full output of the IC202 to safe levels, and in theory should significantly reduce the sensitivity in the receiving mode. However, the sensitivity was superior to any of the diode rings tried before and, interestingly there was no tendency to overloading, which my FET based up-converter for 14MHz suffers from on occasions.

The 137MHz signal is derived from a 50p crystal, a 45.7Mz, with a multiplier and amplifier chain. With the older type of IC202, without side-band selection facility, the oscillator should be on the higher side of 144MHz if SSB operation is desired.

The whole project was built on a single sided PCB, using the "lino cutter" technicque (components same side as foil). I believe that the most expensive item is the T-68-6 core. I would be interested in any other ideas on bi-directional mixers.



ANOTHER USE FOR THE SWR INDICATOR

By Bill Tillett, K5CVK

(Reprinted from June 1982, QST)

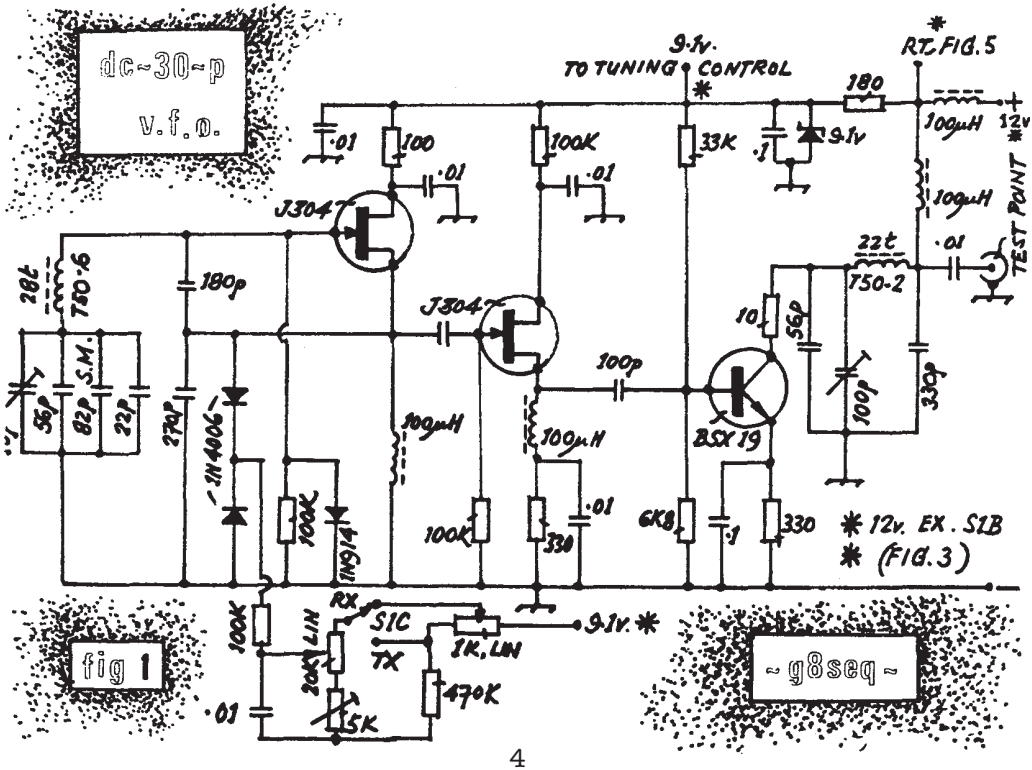
An SWR indicator can be made to double as a field strength meter simply by disconnecting it from the transmission line and plugging a length of wire into the transmitter input. Relative field strength can be read with the meter set in the forward position.

I used mine to tune a two metre mobile amplifier for maximum output. With a 19 inch piece of stiff wire in the coaxial jack, and the meter sitting on the car hood, I was able to adjust the amplifier quickly and easily.

THE DC-30-P TRANSCEIVER

The DC-30-P TRX originated in South Africa, Graham ZS6HV being the principle designer. The version shown here is an Anglicised version, developed as a club project for the COVENTRY AMATEUR RADIO SOCIETY by G8SEQ. Kits are available from him.....see ad.

DC-30-P OFFER: Double sided PCB and construction notes £6. Kit of parts, less box £35, full kit £40. These prices include U.K. postage and packing. Overseas members please write for price quote. Also available, DC-40-P and DC-80-P, same price. Three band kit, covering 80, 40 and 30 metres £55, full kit only. Send orders to G8SEQ at 14 Hollow Crescent, Radford, Coventry, CV6 1NT.



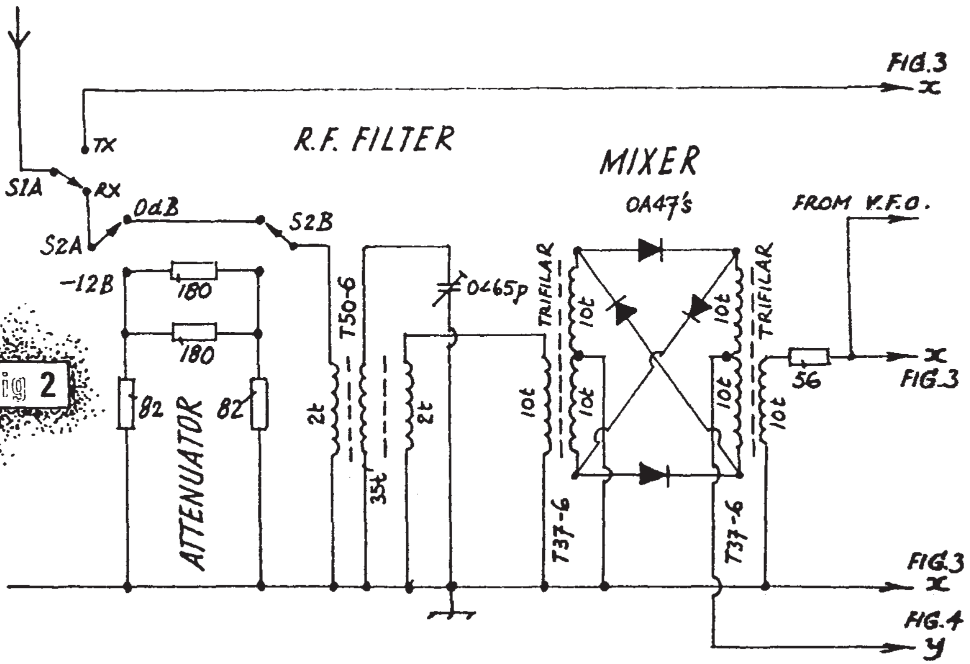


FIG.3
x
TX
R.F. FILTER
MIXER
S1A
RX
0dB
S2B
S2A
OA47's
FROM V.F.O.
-12B
180
180
82
82
ATTENUATOR
T50-6
2t
35t
2t
0-65p
TRIFILAR
10t
10t
10t
10t
10t
10t
56
FIG.3
T37-6
T37-6
FIG.3
x
FIG.4
y

fig 2


+12v.
500mA
1N4006
etc
P.S.U. PROTECTION

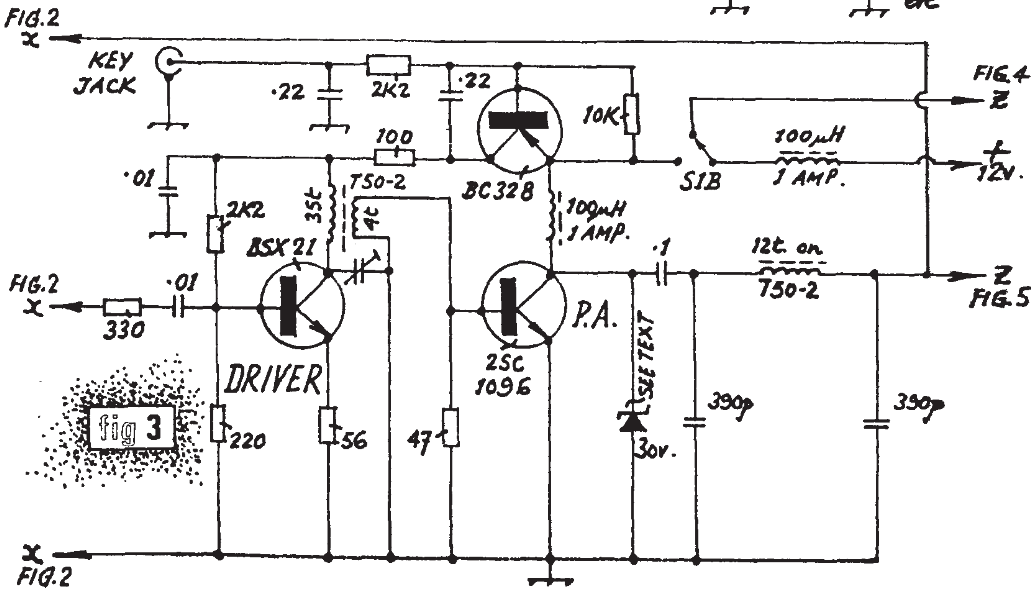


FIG.2
x
KEY
JACK
·22
2K2
·22
10K
FIG.4
Z
100
100µH
1 AMP.
+
12v.
·01
S1B
BC328
T50-2
35t
4t
2K2
100µH
1 AMP.
BSX21
·1
12t. on
T50-2
Z
FIG.5
FIG.2
x
·01
330
P.A.
DRIVER
2SC
1096
SEE TEXT
390p
390p
220
56
47
30v.
x
FIG.2

fig 3

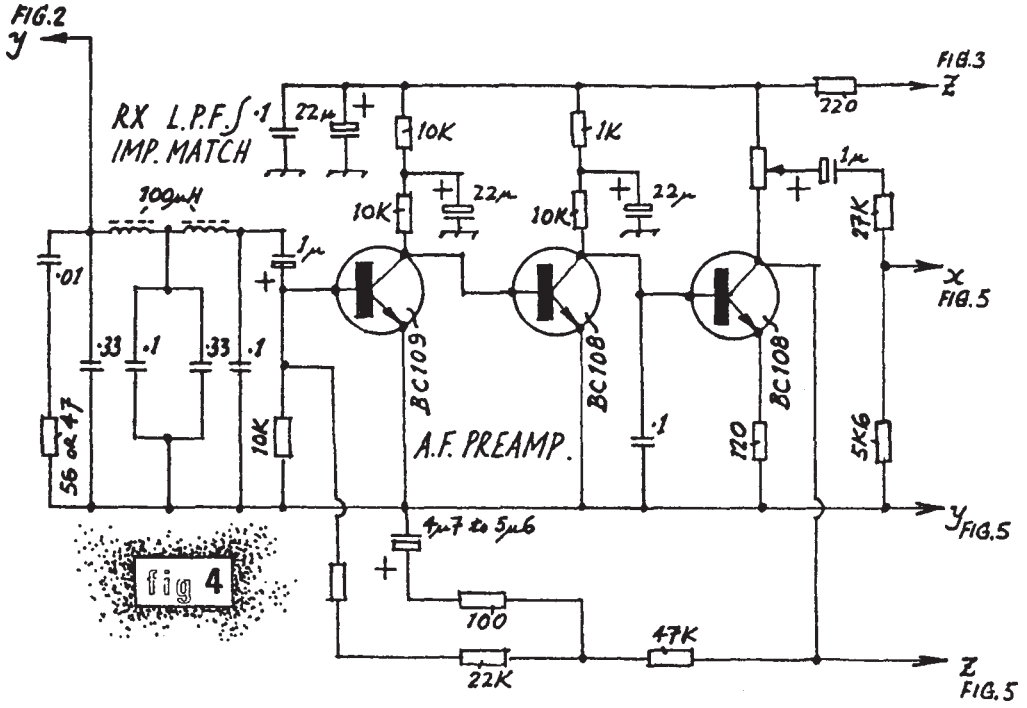


FIG.2
y
RX L.P.F. & IMP. MATCH
·1
22µ
10K
1K
220
FIG.3
Z
100µH
10K
22µ
10K
22µ
1µ
27K
·01
·33
·1
·33
·1
1µ
BC109
BC108
BC108
X
FIG.5
56 or 47
10K
A.F. PREAMP.
·1
120
5K6
4µ7 to 5µ6
100
47K
22K
Y
FIG.5
Z
FIG.5
fig 4

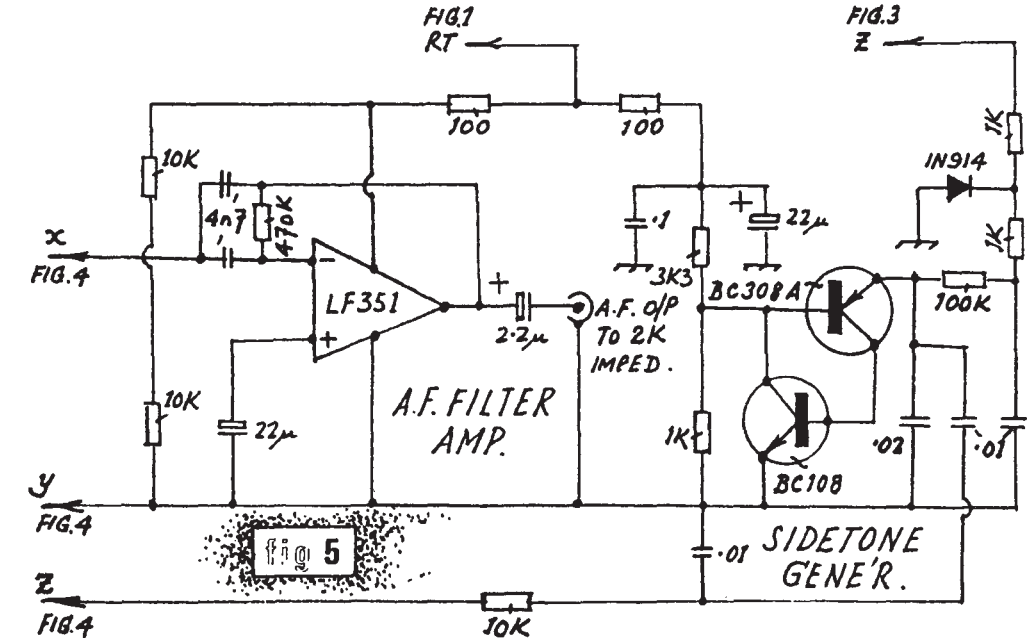


FIG.1
RT
100
100
FIG.3
Z
10K
4n7
470K
IN914
1K
1K
x
FIG.4
·1
22µ
3K3
BC308A
100K
LF351
2·2µ
A.F. O/P TO 2K IMPED.
10K
22µ
A.F. FILTER AMP.
1K
·02
·01
BC108
y
FIG.4
·01
SIDETONE GENE'R.
Z
FIG.4
10K
fig 5

THE PICCOLINO TRANSMITTER

By Ha-Jo Brandt DJ1ZB

SPRAT readers will have noticed that Alan, G4DVW and John, G3DOP must have operated a free running power oscillator on the lower bands when working for the G4EZF Trophy. But everyone who had the chance to gain personal experience with such a device will support the author's view that for regular service, a single stage transmitter should be crystal controlled today, to offer a minimum of frequency stability to our modern, highly selective receivers.

The Piccolino has been designed with this problem in mind, and to demonstrate one of the simplest solutions to get on the air today. With a 24 volt supply it will deliver about 1 watt of RF into a 50 ohm aerial. A 12 volt supply will be 250mW. The VXO range will be 3 to 10KHz, depending on the crystal characteristics, (even on 80 metres). Best results have been obtained using the old FT-243 crystals. Modern HC-6/U or HC-25/U types have a smaller pulling range, (in contrast to experiences on the higher bands), and may produce a chirpier signal because the crystal current is rather high, (about 40mA). A PNP transistor was chosen because with the usual positive supply collector and cooling fan can be directly grounded. Also, direct keying from an El-bug is possible, (with a PNP transistor). Those who cannot obtain the BD138 may try the RCA 2N5322/23 (TO-5), or the 2N6180/81 (plastic TO-5).

Under normal operating conditions, collector current will be 80 to 100mA at 24 volts. With the tank circuit detuned or the crystal removed, the current will rise to 150mA, which is acceptable (within the SOAR). If different current values are measured, the base series resistor (22K) should be varied accordingly. One DPDT miniature swtch is used for band switching (adding capacitance to the tank and series inductivity to the VXO circuit), and another for the transmit/receive switch. Molded RF chokes have been used for the VXO coils.

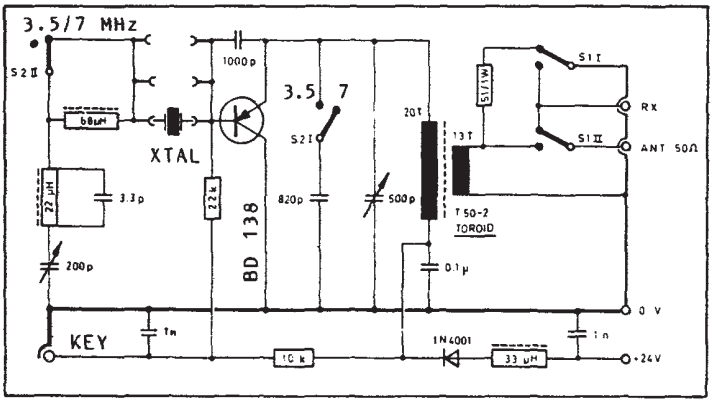
LOW PASS FILTER: One drawback of this simple circuit is its low harmonic suppression (just 16dB for the second harmonic), due to the heavy loading of the tank circuit to obtain 1 watt output at 24 volts. (A high voltage version of this circuit, using a BF457 video output transistor and a negative 80 volts supply, showed much better harmonic suppression, 26 to 29dB.) Therefore, a simple low pass filter had to be added to the 24 volt version. It may be inserted into the coaxial line to the ATU or aerial, or within the transmitter circuit between the output link coil and the transmit/receive switch.

SPOTTING: Due to the influence of the aerial on frequency, spotting may look a bit tricky at first, but its accuracy is most important today, because the QSO partner may use an IF bandwidth of 250Hz only. In the receive position, the transmitter is loaded by a 51 ohms, 1 watt resistor. So the transmitter may be keyed to check if a calling station is within the VXO range, and if this is true, to tune the VXO to the same frequency (zeo beat or same tone pitch in the receiver). After this it is necessary to switch to transmit and key the transmitter again to check if the beat note is still the same. If the aerial is close to 50 ohms, there will be little difference. Otherwise the VXO and/or the tank circuit must be slightly retuned.

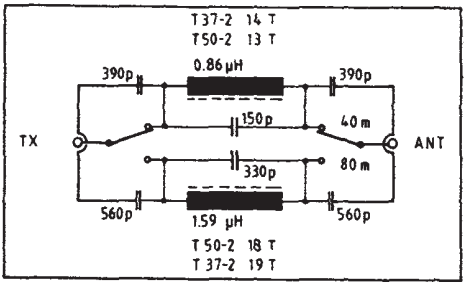
The author has operated the Piccolino on a 21 metres wire aerial with a counterpoise, tuned to 50 ohms by his QRP ATU, (shown in The G-QRP-CLUB Circuits Handbook), with good results on both bands and a lot of fun about the performance of this simple circuit.

TRY CALLING ON THE QRP FREQUENCIES: 3560, 7030, 14060, 21060 and 28060KHz.

—CIRCUIT-DIAGRAM of the P I C C O L I N O QRP-TX



HARMONIC-FILTER FOR QRPing



Drawings first published in the German Magazine "Funk" Oct/Nov 1984.

SPRAT SMALL ITEMS AND ADS

QRP MEMBERS IN THE OXFORD AREA: EA5EVS will be in Oxford during the Summer and would like to meet local members. If you would like to contact him, the QTH is :- Francisco Garcia, Apartado Correos 859, 46.080 Valencia, Spain.

FOR SALE: FT290R 2m rig in good condx, no nicads or charger - £200. David Perry, G4YVM, School House, Cedar Road, Dudley, West Midlands, DY1 4HN.

FOR SALE: Due to reorganisation, the following items are for sale, all clean and well constructed. Fuller details can be obtained by telephone:- Eddystone 888 RX £50, BC221 £20, Stabilised PSU for BC221 £10, Dart Top Band TX £25, QRP RF Wattmeter £7.50, QRP SWR Bridge £10, SWR Meter £3.50, GDO £10, ATU £3, 20m TX £5, PCB and most components for Teme VFO/TX sections £20, Dual PSU £10, Bargain packets of useful clean components, including such items as meters, relays, SM drives, Xtals etc etc £5 each. Mains PSU rack mounted, output approx 375v at 180mA and 6.3v £10. All carriage extra at cost or buyer collects (North Wales). Ian Wilks, GW3FSW, Tel: 0745.570538.

FOR SALE: FT77S, CW FM board, marker and Yaesu mike, £350. Chris G3TUX, QTHr or tel 0428.5655 daytime.

FOR SALE: Yaesu FT7 plus BNOS 6A PSU and headphones, £260 inc. compensated post. John Allsop G4YDM, Tel 091.4162606.

WANTED: All band CW TX, i.e. Panda Cub, KW Victor, DX40 etc., or homebrew. W.H.Y? - Adrian, G4GDR, QTHr or telephone 0793.762970.

THE TSC Mk I 40M QRP SUITCASE TCVR

By Mike Michael W3TS

The TSC Mk I is my "suitcase radio". The name comes from TS (for W3TS), C for the band (A=160, B=80, C=40, D=30 metres etc.), and Mk I because it is my first suitcase style QRP rig. (I was copying the nominclature style of the S.O.,E. and S.I.S., Wireless World Jan-Feb 1982 and "Clandestine Operations" by Pierre Lorain - MacMillian Publishing Company, [this book is very good if you are interested in S.O.,E. radios, etc.]).

The unit is built into a 10 x 7 x 3 inches plastic equipment case I picked up at a hamfest. It also holds the batteries, (8 AA pencells), the key, (an old J-38 on its plastic base turned end fore-end), a small 40m dipole (rolled up on a homebrew spool) and "Walkman" radio folding earphones.

The receiver is based on QST November 1981, "A Progressive Communications Receiver", with an active CW filter added, (from Solid State Design for the Radio Amateur), an FET mute switch and LM386 half watt power amplifier. The side-tone is a copy of the one used in the Mac Modded Super OXO in SPRAT.

The transmitter is based on QST August 1981, "The Ugly Week-ender", using the T/R switch set-up from "An Optimised QRP TCVR", QST August 1980.

The VFO is a good old FET Hartley, but varactor diode tuned because variable capacitors and dial drives are expensive and hard to find. The tuning range is about 50KHz, so I added another trim capacitor, that is switched in and out, to get two 55KHz tuning ranges. This way you only have to mount a pot and don't need a drive - so it is much easier to build. The two ranges are labelled in red and blue and the range switch is also coloured red and blue, (like the S.O.,E., a Mk III receiver dial), so you can tell which range is read.

I used PCB as a ground plane and point to point (ugly) construction. For the labelling I used "Pilot Sc-uF" fine point permanent markers and coated over them with "crystal clear crylkon" lacquer.

For tune-up, set the main VFO trimmer to frequency, switch in the range switch and set for approximately 50KHz coverage below the first range. Then check the VFO TX offset, (note frequency key down, set 750Hz lower than key up frequency).

This has been a very enjoyable project and has started me on a new hobby - trying to find information about suitcae radios and maybe someday an S.O.,E. A Mk III (B2 Minor), or 3 Mk II (B2), or MC 1 RCVR to add to my shack.

After using the C Mk I TCVR for a few months, an RIT circuit would be a good addition.

Two band operation for 7 and 10MHz can be accomplished by changing the TX output pi-network to cut off at 10MHz. Tap the RX input coil for 10MHz coverage and switch the capacitors in and out of the VFO for 10MHz coverage.

SPECIFICATIONS:
RX: Direct conversion, diode DB mixer. 7.000 - 7.100MHz VFO range, two stage active audio filter, 1/2 watt audio output drive internal speaker, self contained batteries.
TX: 1 and 4 watts output - switchable, 50 ohms output, relative output meter, 7.000 - 7.100MHz VFO range, automatic TX offset, side-tone built in, varactor diode VFO tuning, full QSK T/R switching, 13.6V power source.

A SUITCASE COMPETITION ENTRY : See SPRAT 38

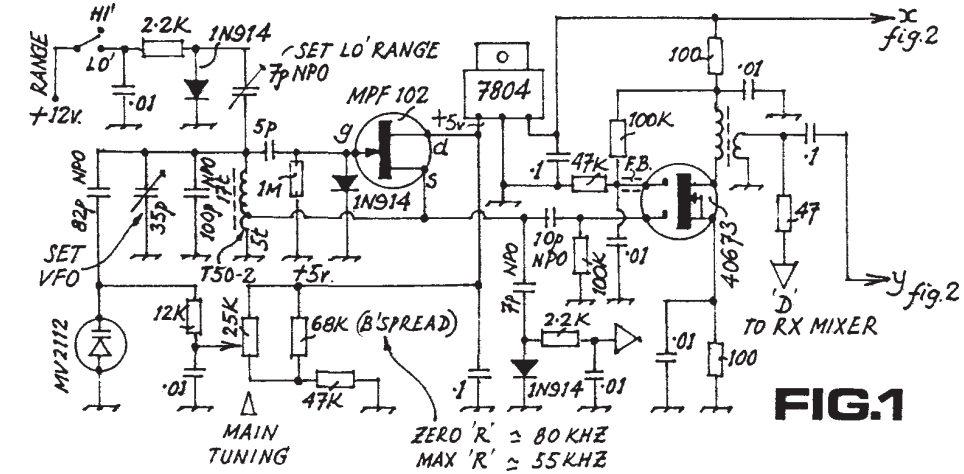


FIG.1

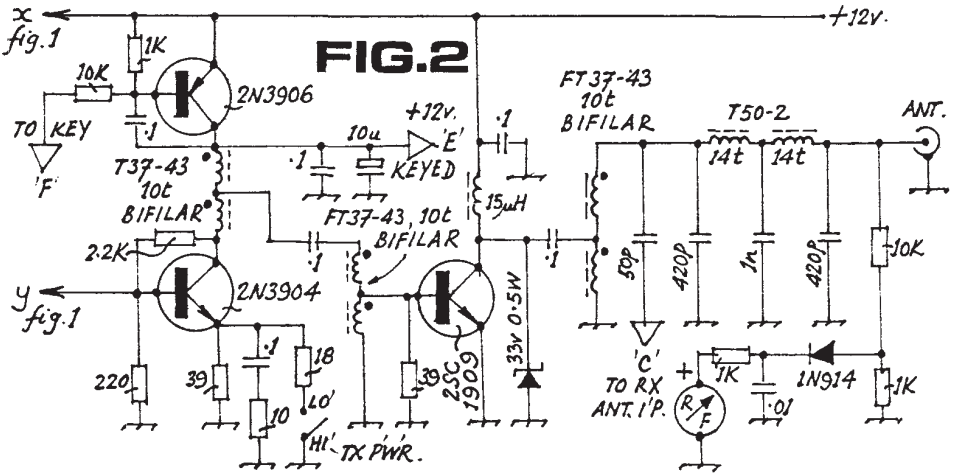


FIG.2

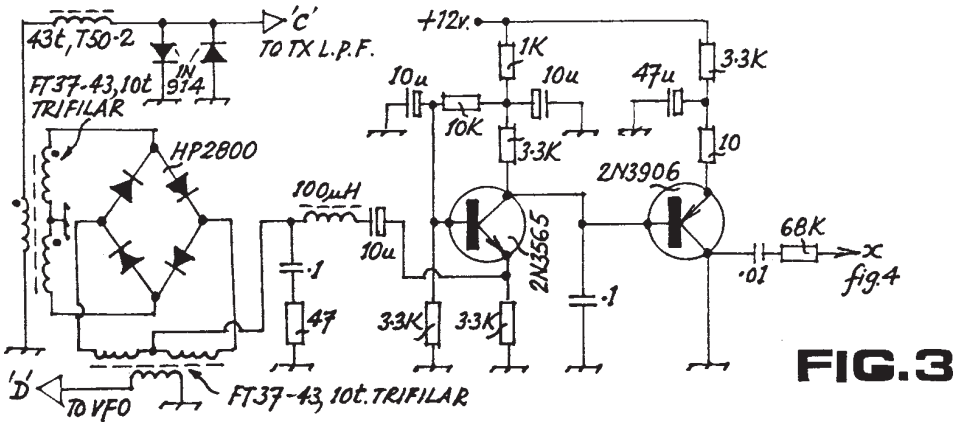


FIG.3

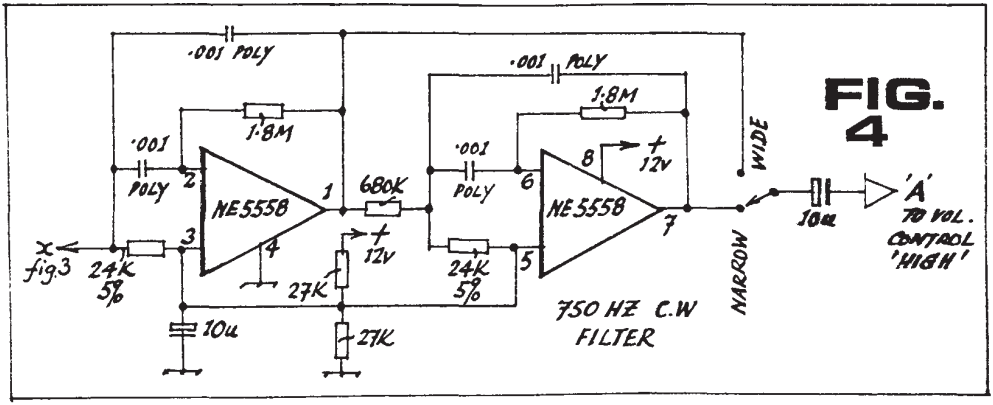


FIG. 4

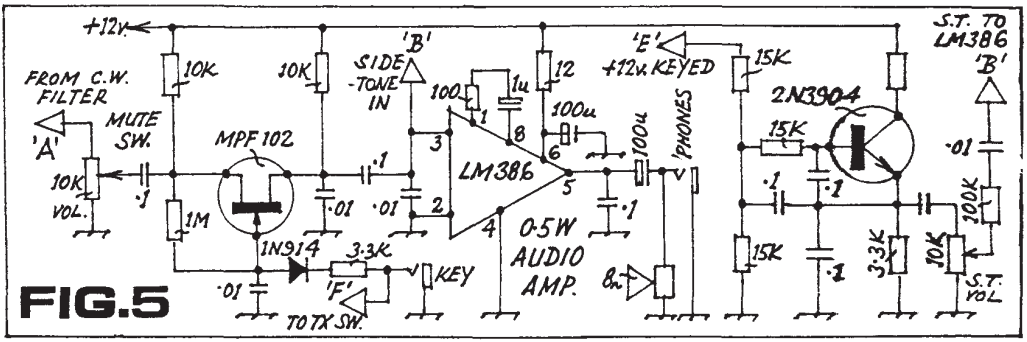


FIG.5

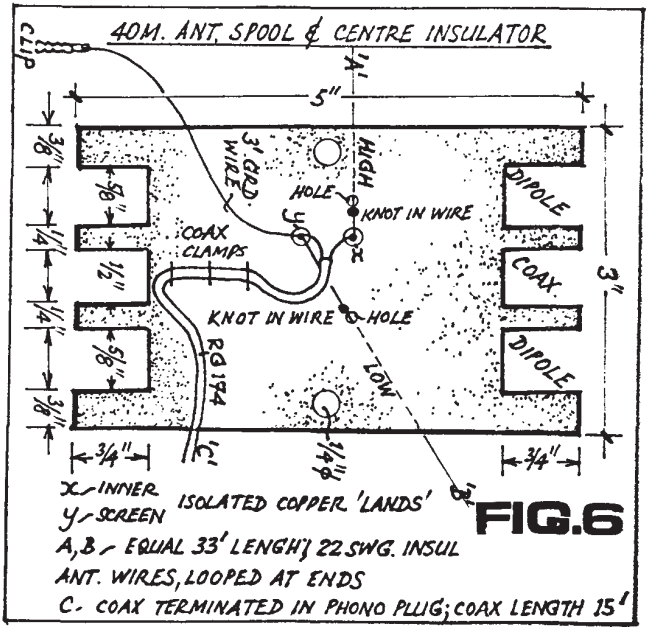
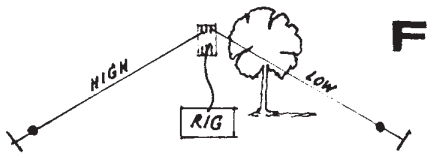
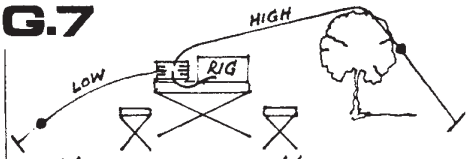


FIG.6

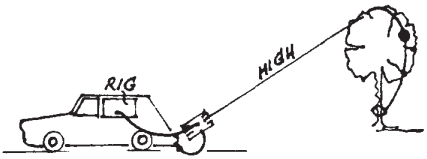
FIG.7



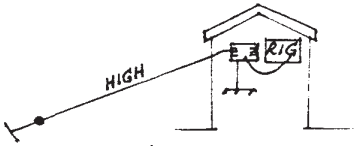
INV. 'V' OR DIPOLE



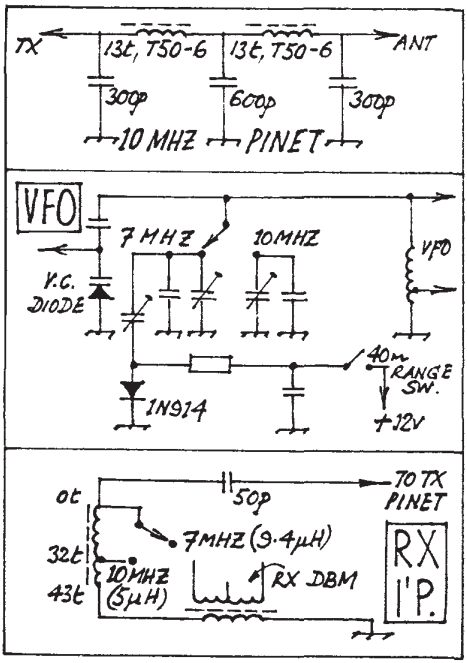
1/4 SLOPER WITH 1/4 C'POISE



1/4 SLOPER AGAINST GROUND



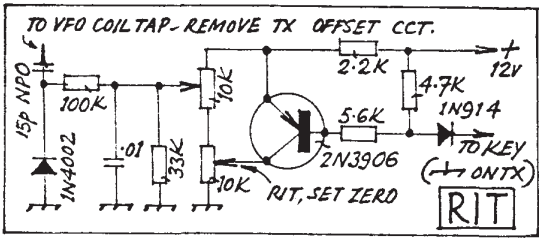
1/4 SLOPER AGST. GRD. OR COUNTERPOISE



SUGGESTED ADDITIONAL CIRCUITRY

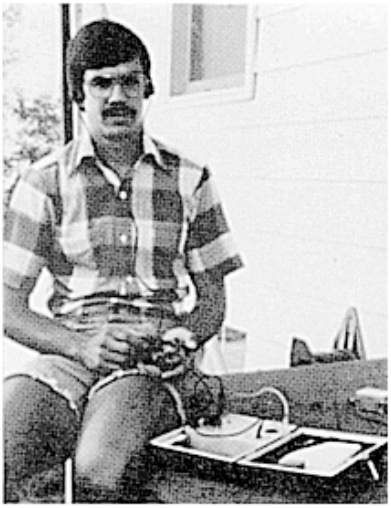
Left: 10MHz operation

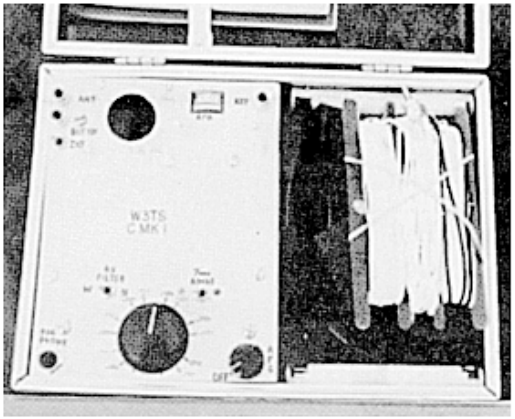
Below: RIT circuit additions

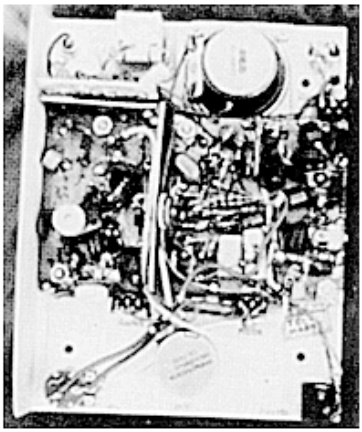


A READOUT OF MEMBERS CALL SIGNS AGAINST NUMBERS (IN CALL SIGN ORDER) An excellent guide for working Club members. We have to charge to cover costs of duplication. This readout will be available for 75p from G3RJV. Please enclose a SASE capable of holding about 10 A4 sheets of paper.

TSC Mk 1



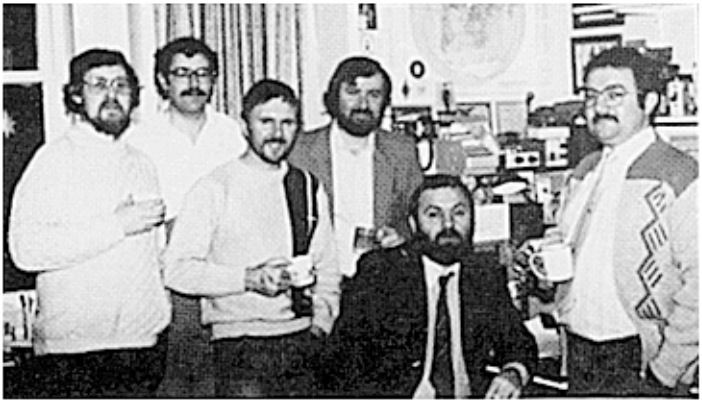




QRP SUITCASE XCVR 7MHZ CW 2W OUTPUT

DATE TIME	STATION CALLED	CALLED BY	HIS SIGNAL	TIME OF ENDING QSO	MY SIGNAL RST	MY LOCATION, TRAFFIC, CHANGES,
0023 24 Aug 84	CQ ME BY	WA3CXW	579	0135	579	BOB Bobbkernon, Pa.
0054 4 SEPT 84	AD8Y	X	594	0105	459	DAVID CLEVELAND, O.
0141	W4SQZ	X	589	0156	569	JAKE MADISON, ALA.
6 SEPT 84 0122	CQ ME BY	KD9FK	579	0138	369	DON FOND DU LAC, WIS.
0138	WB9IGO	X	579	0150	569	JIM WHEATON, ILL
8 SEPT 84 1301	NF8D	X	589	1314	559	AL WHITEHALL, MI
15 SEPT 84 1828	WB8MZZ	X	599	1830	599	OHIO QSO PARTY
22 SEPT 84 1854	N2FBV	X	589	1856	599	004 MASS QSO PARTY NY
1855	WØWJM	X	579	1910	569	MIKE ST LOUIS, MO.
25 SEPT 84 0114	CQ BY ME	VE3DJD	569	0127	579	HERMAN OUT
30 SEPT 84 1311	NX4C/QRP	X	559	1314	559	QRP TEST? TN
1318	WA1WER	X	579	1332	589	JOHN DOVER, MASS.
2226	WA8JPC	X	589	2239	589	GREG GAMPOLIS PKWY, WVA
OCT 3-84 2248	CQ BY. ME	W9GGG	579	2318	579	EDWARD CHICAGO, IL

Photo Report

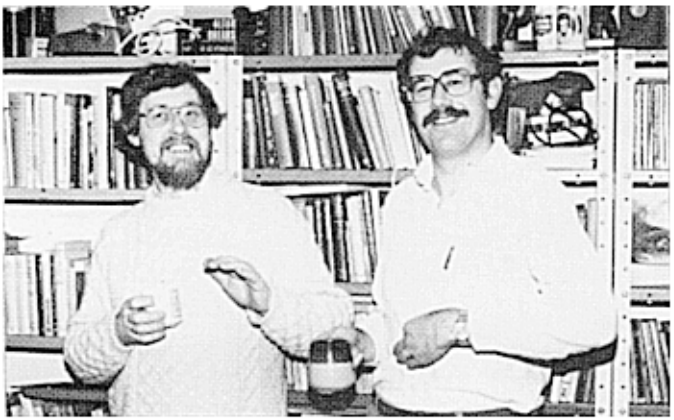


Those who worked 80 metres in the Winter Sports may have noticed that G3VTT was active from the G3RJV QTH for the latter part of the event. When Colin arrived at the G3RJV QTH a rapid call up of local members active on 80 CW raised the group above. Left to right: David (G4HYY), Colin (G3VTT), Bill (G4KKI), Eric (G4EIC), Dave (G4EZF) and Vince (G4DQP).

A fine hirsute collection of QRPers! Perhaps because he feared collecting facial hair on his fine features, not on the group photograph, but left, is Brian (G3SYC).

The first gathering of Pennine QRP Club members spent the evening swopping stories of rigs, what they had worked and what got away, pausing briefly from time to time to eat and revive their spirits with alcoholic beverages.

"I´ve been running QRP since I was this high", says David (G4HYY), much to the amusement of Colin (G3VTT). How does that VTT manage to get his picture into every issue of SPRAT?



Dave (G4EZF) "at the controls" of the RJV station. Dave did manage to two-way QRP QSO on 80 metres with member G3LGH.....all of two miles away!!

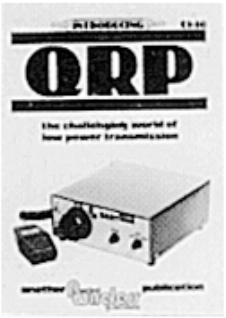
The smiling face of Bill (G4KKI), an avid builder of equipment and QRP operator. Bill's remarks can often be read in the "QRP CORNER" in the magazine PRACTICAL WIRELESS. May I remind members that Eric, (G4AR) is always happy to receive letters about QRP operation to include in the QRP CORNER in his ON THE AIR column.

Brian (G3SYC) has been a keen constructor for many years. Many members will recall the valve 80 metre transmitter, with which Bill worked scores of other members.

Built like a battleship and proof of the strength of the SYC arms, is this excellent home made receiver, which won the admiration of us all.

A NEW BOOK ON QRP

THE PRACTICAL WIRELESS have announced that they are to publish a new book called INTRODUCING QRP.

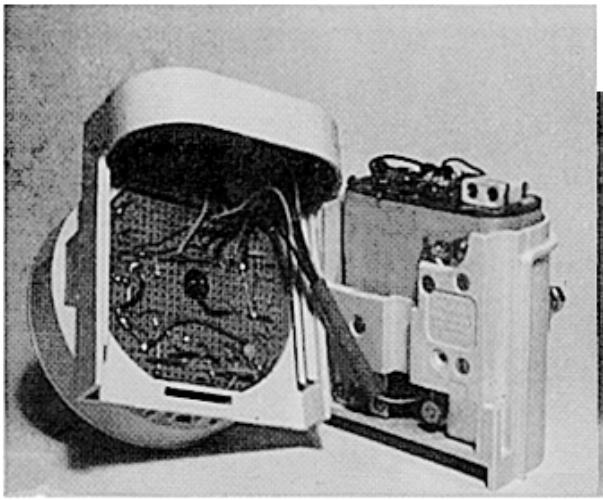


This will be the latest in their series of books based upon items which have appeared in the magazine. The book includes The Severn 7MHz transceiver, the Teme modular 7/14MHz transceiver, The Dart 160m DSB transmitter and QRP SWR and Power Meters.

The cover price of the book is £1.50, which looks like very good value indeed, and it will be available shortly from the PRACTICAL WIRELESS magazine.

A New Certificate
The IARU WAC (QRP)

Photo:W5QJM



AN ALL WEATHER (NOVELTY) SIGNALLER

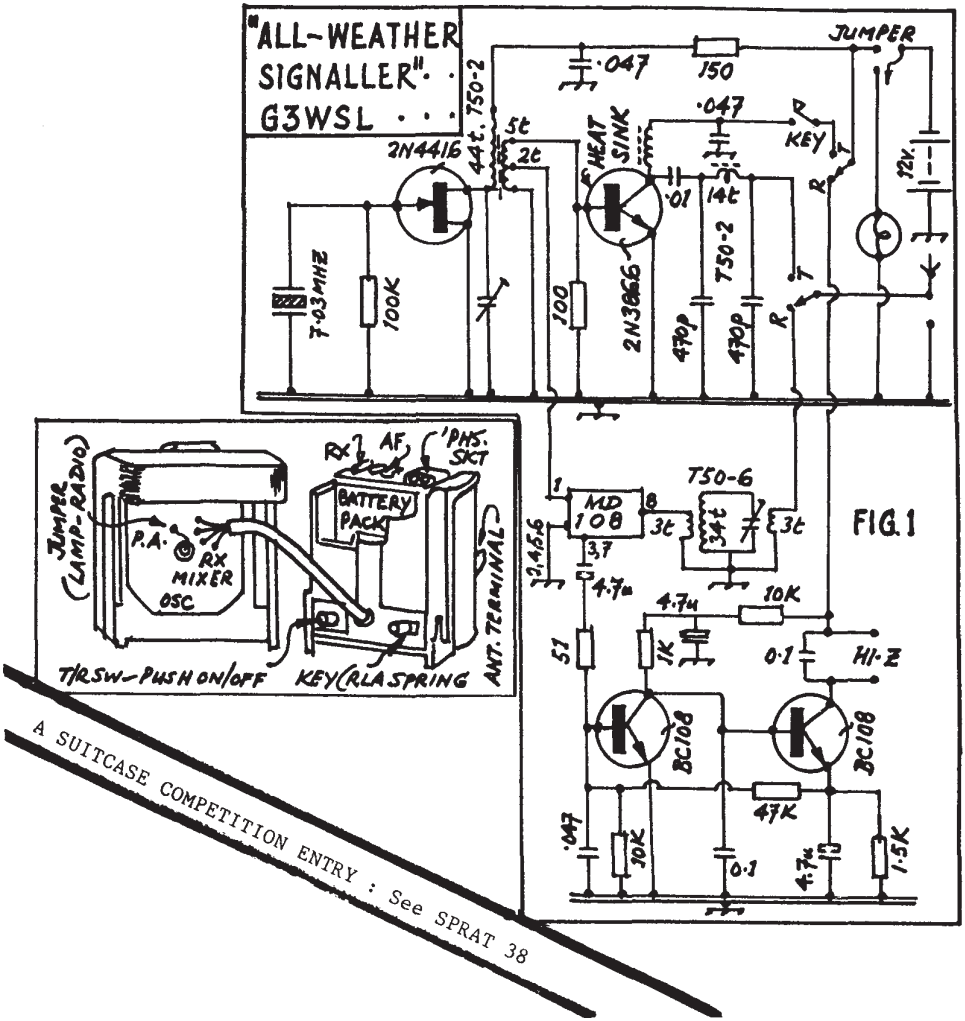
By S. Garner, G3WSL

Alternative signalling methods are provided by this transceiver built into a bicycle lamp. It delivers in excess of one watt, either in the nano-metre band, or at 7030KHz.

The lamps duality is only detectable by the insulating washers on the fixing bolts that double as antenna and ground terminals. Opening the case exposes the battery pack, wavechange jumper, T/R switch, key, circuit boards, and headphone socket.

The circuit is conventional, although its implementation requires shaped circuit boards and modifications to the inside of the case. The PA, OSC and RX mixer components project into the space behind the lamps reflector, while the AF amplifier is attached to the battery pack.

Contacts with DL, F, GM and ON stations have been achieved on 7030KHz, but experiments have proved that the nano-metre facility is not effective over the same distances.



A SUITCASE COMPETITION ENTRY : See SPRAT 38

Lower Power Contest 1985 Rules

1. *Aim of Contest:* To encourage QRP operation.

2. *Eligible Entrants:* Single operator stations only. UK entrants must be fully paid-up members of the RSGB.

3. *When:* Sunday 21 April, 1985, 0700 to 1100 gmt and 1300 to 1700 gmt.

4. *Sections:* (a) British Isles stations using 5W input or less.
(b) Overseas stations using 5W input or less.

5. *Frequencies:* 3·5MHz and 7·0MHz bands only.

6. *Mode:* CW (A1) only.

7. *Contest call and exchange:* CQ QRP; Exchange RST and serial number starting at 001, plus input power, for example, 569 001 3W.

8. *Scoring:* 15 points for each completed contact with another QRP station. 5 points for all other contacts. Overseas stations may only score for contacts with UK stations.

9. *Logs:* Separate logs must be submitted for each band. All exchanges to be shown.

10. *Declaration:* Each entry must be accompanied by the following declaration: "I declare that my station was operated in accordance with the rules and spirit of the contest and in the event of any dispute the decision of the Council of the RSGB will be final." The declaration must be signed.

11. *Address for logs:* RSGB HF Contests Committee, c/o Mr. N. S. Cawthorne, G3TXF, 10 Wilton Grove, New Malden, Surrey KT3 6RG, England.

12. *Closing date for logs:* Logs must postmarked not later than 13 May, 1985.

13. *Awards:* The 1930 Committee Cup will be awarded to the leading station in section (a). Certificates of merit will be awarded to the leading three stations in each section and to the highest placed entrant in each section using 1W input or less.

CLUB QSL BUREAU: G4BUE will distribute QSL cards for other Club members via the mailings of SPRAT. Please note this service is for inter-Club QSOs only and cards for non-mwmbers cannot be accepted. Please add the Club number of the recipient of the card on the back top right hand corner. The cards are sorted by Pam, G4BUE/2 and should be sent to her at "Alamosa", The Paddocks, Upper Beeding, Steyning, West Sussex, BN4 3JW, England, by the 10th of the month of publication of SPRAT, (i.e. March, June, September and December).

CLUB ITEMS FOR SALE

PRINTED CIRCUIT BOARD AND BADGES:

Please note that the stockist for BADGES, as well as Club PCBs is Mick Hodges, G4OPE, 51 Carnford Road, Sheldon, Birmingham, B26 3AG.

BADGES:

LAPEL BADGES (metal) 1 inch dia., Club logo in silver on black. 70p ($1)
CALL SIGN BADGES, as above but with call sign engraved on base bar.
Please order with call sign clearly printed (slight delay). £1.50 ($3)
KEYFOBS, leather with metal insert of Club logo. 75p ($1)
BADGE INSERTS 1" plastic disc with Club logo in silver on black. 20p (2 for $1)

Postage rates: add 20p for up to 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. £1.25
A simple transmitter (xtal) for 80/40/20 from Short Wave Magazine by G3RJV.

THE S.T.X. TRANSMITTER. £1.00
About the simplest possible HF xtal transmit board by GM3OXX from Sprat 35.

THE FOXX TRANSCEIVER BOARD £1.10
Ultimate fun rig by GM3OXX, Sprat 35, on 2"x2" PCB.

WARC CONVERTER BOARD £2.25
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 10106 14060 21060 28060 KHz (up to 21MHz in fundamentals)

Other 14MHz CW frequencies: 14030 14040 14050KHz

All at members price of £3.50 each including postage and VAT, from:

P.R. GOLLEDGE ELECTRONICS, MERRIOTT, SOMERSET.

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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).

* * * * * * * * * * * *

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

S.S.B. G3ROO

Ian Keyser, Rosemount, Church Whitfield, Dover. Kent.

After my gripes of the last year, I have nothing to complain about for this copy of SPRAT. We will start with the readers news and then follow with other matters.

The first letter is from an old friend who is remembered by many for the superb way he held together our old 20 metres net of three years ago. John, LA2QAA seemed to vanish from the airwaves without trace, but the letter reveals that after a pretty disasterous period, things are slowly getting themselves back together for him. For those wishing to contact John we have a daily sked at 1600z on 14240. Also on Sunday mornings at 1000z on 3700 he has a net of ex-patriots.

Brian, G4DYF netted W1BJ with 4 watts PEP on 80 metres and strongly suggests other QRP stations try early mornings on this band. Brian has also built the DSB2 for 20 metres and had a lot of fun working European and USSR stations while "lying in the bracken in the early morning dew"!!!

Dave, G4XNP, an ex Dovorian, writes to say that since the change of sked time he has not worked any Club stations due to the QRM. Hope to work you very shortly Dave, more about skeds at the end.

A long letter from John, G4WQD with news of a 160 metres "soldering iron net". A long list of homebrew and commercial equipment makes up John's shack. The R1000 RX is gaining most attention at present, as he has been converting it to a transceiver, and experiencing problems with feedback. I had similar problems when I modified my FRG7 as a transceiver. The usual cause is supply feedback, and a fairly good remedy is to have separate regulators for each section of the circuit, rather than one high current regulator.

Ken, GM4JMU writes with a tale of woe. Having got a G4CLF board going on 7MHz, he decided to "tidy it up" with the inevitable result! PA switching was put in the wrong way round and he blew up the SBL1. The little rig works well now after modification to 80 metres (and repaired!).

The last letter is from Ben, CT4CH another long lost friend from the days of the 14MHz sked. He has been off the air for the last four months due to being away from the home QTH. He is now thinking of aerials, but in the meanwhile might be active from CT1DP's QTH from time to time.

That leads us back onto skeds. It seems obvious that the existing sked has failed, mainly due to timing. I propose that we change the sked to a Sunday morning (sorry George!) on 3690+-QRM at 1000 clock time. This, at the moment, will clash with John's sked at 1000z, but the clocks will soon change to Summertime. Also there is John, G4WQD who has a sked with Bill, G4KKI on 1945KHz at 2100z, and John has invited QRP stations to join in.

The final piece of news is that I am sponsoring a construction contest, the title being "SIMPLE SIDEBAND". Judging will take place early in November, and entries must be in by the end of October at latest so that the results can be included in the winter SPRAT. The rules are simple, the prize will be £10 and the cost of the components, (not new), must be below this. An effort to supress one of the sidebands will be taken into account in the scoring, as this reduces QRM on the bands, but the most important point is expressed in the title, "SIMPLE SIDEBAND"

STOP PRESS NEWS.....
On 18.2.85 at 1330, Mike, G4JXX had an interesting two-way SSB QRP QSO. Mike used an Omega transceiver on 1 watt of SSB for a two-way with KD2FF in Woodstock, who was also using 1 watt of SSB. This was Mike's first 14MHz Stateside QSO this year.

Awards

G8PG

A.D. Taylor, 37 Pickerill Road, Greasby, Merseyside. L49 3ND.

THERE IS ROOM FOR BOTH LITTLE AND LARGE IN QRP!

Special congratulations to two whose calls appear below. To G4ELZ for his excellent work in contacting 100 members when using a bent indoor wire in the roof space. And to the King of The Big Wires, GM3OXX, on being the first to work 300 members.

NEW QRP MASTER

Congratulations to YO6HQ, who becomes Masters No.18. Well done.

Hearty congratulations to the following.
QRP WAC - G3BFR SM7KWE

QRP COUNTRIES - 100 PY2TU; 75 SM7KWE, YO6HQ; 50 G3BFR; 25 G4JZO

WORKED G-QRP-CLUB - 300 GM3OXX; 220 G4BUE; 140 OK1DKW; 120 G4CQK, GM3RKO; 100 G4EZF, G4DQP, CT4CH, G4MIJ; 80 G4JZO; 60 YO6HQ, G3VTT; 40 G8QM, SM7KWE; 20 G3BFR, G4RAW

TWO-WAY QRP AWARD - 20 G4DQP, G4MIJ; 10 G4JZO, G3BFR, G3VTT

CW NOVICE AWARD OPEN TO UK CLASS B LICENCEES FROM 1st APRIL 1985

From 1st April 1985 any Class B licencee who has CW contacts with 50 different stations may claim the CW Novice Award. Rules as already published. Incidently, we understand that after 1st April, the small minorty who until now have said "CW is for the birds", will be changing to "CW is for the birds and the Bs".(!)

USE OR LOSE

There is some concern about the lack of use of the 10MHz band by CW operators at the present time. This is our chance to show the way. Please use QRP CW on 10MHz whenever possible, (yes G8PG is in process of building a rig for the band).

IARU APPROVES QRP ENDORSEMENT FOR WAC

The International Amateur Radio Union (IARU) has finally approved a QRP endorsement for its well known Worked All Continents Award (WAC), effective from January 1st 1985. A sticker endorsing the standard WAC cerificate for low power operating will be available for proof of contacts with the six continents for QSOs on or after 1st January 1985. It is not available for contacts made prior to that date.

Power during the contacts must not exceed five watts output or ten watts input. The effort to secure the QRP endorsement began in July 1983 at the IARU meeting in Cali, Columbia when the idea was advanced by Carl Smith, W0BWJ, Vice-President of Region II at the request of some union members. It won final approval at the IARU meeting last summer in Paris.

To qualify for the award an applicant must submit QSL cards from amateurs in each of the six continental areas, as defined by the IARU rules and as shown on the ARRL world map. No photo copies of cards are acceptable. QSLs must show contacts made from one station, in terms of call sign from one location, (an area of metropolis not exceeding 40Kms or 25 miles in diameter), and the mode and/or band for any endorsement applied for.

WINTER SPORTS BEAT CONDITIONS AND POST-CHRISTMAS HANGOVERS - 80 BUZZES - TRANS-ATLANTIC (JUST!) - YOU-KNOW-WHO WINS THE G3RJV PRIZE - 18 COUNTRIES ACTIVE

By Gus Taylor G8PG

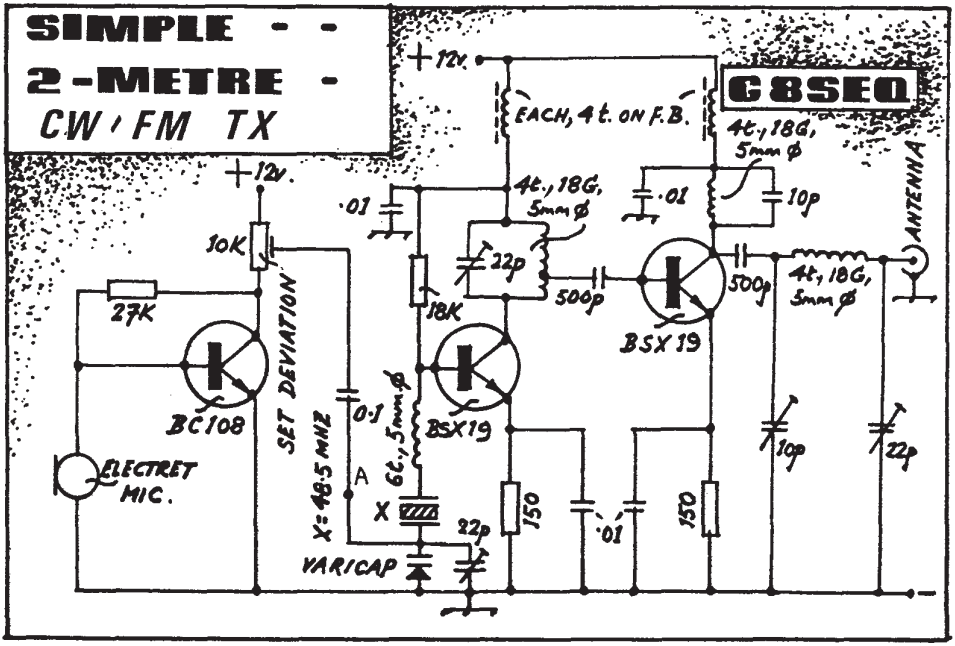
Conditions during the first few days of the Sports were generally pretty poor, but activity was high. During the last two days conditions picked up, and 3560 and vicinity sounded more like a major DX contest. The HF bands never fully opened up, but the trans-Atlantic path was there - at least between N4IT (4w) and GM3OXX/A.

Incredibly Andy, WB2RZU does noy appear in any of the logs received, maybe they cut his antenna down! European stalwarts such as I7CCF, OK2BMA, DK5RY and OK1DKW were there, but Petr says conditions were grim. Activity took place from at least 18 countries, with HA making a welcomed appearance.

The G3RJV Anniversary Prize goes to GM3OXX, who worked no less than 74 members. The G4DQP Trophy goes to Felix I7CCF, who despite poor conditions, worked many members in the UK. As no North American logs have been received, a Merit Certificate goes to G4HMC who submitted an excellent log, despite being restricted to a 45 feet antenna run. Thanks to those who submitted logs, and to all who took part. CU next year.

THE G2NJ TROPHY GOES TO GM3OXX

The G2NJ Trophy follows a three yearly cycle, and in 1985 it is awarded for the best technical contributions to SPRAT over the previous three years. In a close decision the award has gone to George Burt, GM3OXX. Readers of SPRAT will remember George's articles on simple basic equipment such as the OXO, the Super OXO, the STX and the FOXX. These circuits have become classics amongst QRP equipment builders, the OXO and the STX probably being the commonest transmitters ever built by club members. Well done, George!



V.H.F.

G8SEQ

John Beech, 14 Hollow Crescent, Radford, Coventry. CV6 1NT.

Well I have had the usual trickle of letters from the membership for the quarter, that even I am begining to doubt if anyone else is interested in VHF QRP. However, undaunted, I will press on. No doubt you will all write the day after I hand this to George. I am getting my copy in early this time, taking advantage of the fact that I am actually at the RJV/G1IJW QTH.

On to business, I am still looking for data for the VHF/UHF Datapack. I have a mountain of stuff gleaned from magazines of years gone by which needs sorting out, but contains a lot of good ideas which I suspect a lot of the newer licencees do not know about. Much of it is from the days when you had to build 2 metre gear because you couldn't buy it!

Since the D.T.I.'s change of policy, there is an ideal opportunity for the Class B constructor to build himself a novice CW rig. The TX for such a rig is shown in the accompanying diagram. It will also do FM and RTTY. Output power should be in excess of 100mW, which with a beam antenna will go an awful long way!

Here are a few notes on construction. Construct on PCB, Vero or Pin board.....your choice. Wherever possible take the most direct route for inter-component wiring, keeping the earthy lead of any component as short as practicable. The parallel tuned circuits should be mounted at right angles to each other to eliminate coupling, which could give rise to instabiliity. If necessary place a tinplate screen between them, or even put the whole of the crystal stage in a small tinplate box. The tinplate is to act as a Faraday screen and magnetic shield. It would be adviseable to use a board not bigger than 2 x 3 inches.

Choose the crystal frequency as a third of the output frequency. It is possible to switch in preset capacitors to cover 3 FM channels, or make a 22pF trimmer a front panel control to tune a useful portion of the CW or RTTY band. Varicap tuning, using a 1N4006 or similar power diode as the varicap; this way you can have remote tuning hundreds of feet away if you so wish. Apply DC to point A for FSK RTTY or from pot for tuning.

Transistors and crystals from Birkett; suitable 20K tuning pot with slow motion drive (SMD) can be obtained from Bonex Ltd., London.

Finally on this little rig, why not squirt the output of the crystal oscillator into an existing DC receiver? You will probably need to add a VHF preamp for a really viable RX, but you should hear the local stuff. Next SPRAT will see my version of the companion RX to this little TX.

AN INVITATION: G4BUE is planning to have another QRP open house this Summer on Saturday 17th August 1985. All members (including all those who came last year), are invited to attend. Please let Pam, (G4BUE/2), know on 0903.814594 that you intend coming, so she can judge the volume of food etc. It is preferable that you bring a bottle of something and essential that you bring your latest homebrew project, (or is that the other way round!!). If you haven't met many members of the Club yet, here is your chance to get to know some of them.

CHANGE OF ADDRESS: Will members please remember to send all changes of address, callsign etc to our membership Secretary, Fred Garrett, G4HOM, 37 Tilshead Close, Druids Heath, Birmingham, B14 5LT. Please quote your membership number.

G-QRP-CLUB QSL CARDS: A distinctive and novel Club QSL card is available for club members. Details of the card and an order form can be had from our Treasurer, Alan Lake, G4DVW, 7 Middleton Close, Nuthall, Nottingham, NG16 1BX.

"Alamosa", The Paddocks, Upper Beeding,
Steyning, West Sussex, BN4 3JW

As a result of borrowing G3LDO´s BBC micro to prepare the last edition of SPRAT, I am now the proud owner of one myself. One member, commenting on the new type-face in the last edition of SPRAT, said that if we printed it in Urdu, he would learn the language to read it!! Hope you like the type face and layout of this edition of SPRAT.

While temperatures have been around freezing of late, I have been trying to think of better times in the Summer. As a result Pam and I have decided to hold another Summer QRP Party this year, please see the Ads column for details. Ade Weiss, W0RSP may be visiting the UK again this Summer, but prior to that Colin, G3VTT and myself are off to the USA. We shall be participating in the QRP Forum at the big Dayton Convention, and meeting USA members, including W0RSP, W1FMR, K7YHA, W9SCH, W9PNE, WB2IPX, W6SKQ, N8ET, and K5VOL, who intend to be there. It has all the makings of another great QRP meeting. Look for details in the next SPRAT.

Still looking into the future, G3CQR asks me to mention the 1985 QRP Convention at Yeovil on the 13th October. Peter is involved in the organisation of it with the Yeovil Amateur Radio Club. Several members have commented about the bad timing of the event, being a Sunday there is very little public transport to Yeovil, and it also coincides with The ARCI Fall QRP Party. Perhaps the organisers can bear this in mind for next year. If you intend visiting Helsingborg, Denmark during 26/28 April, get in touch with SM7KWE and he will give you details of the Ham Festival to be held there. Similarly, if you will be near Buedingen, West Germany on 6/7 April, get in touch with DJ5QK for information on their European CW Meeting.

The winter months have seen a great deal of homebrewing. G4JBL is building the Ben transceiver for 10MHz, GM3OXX is building his new TCVR and G4JXX has built the SSB/CW Omega from Ham Radio Magazine. Mike has worked T77 on 14MHz and 3X on 28MHz with it on a G5RV and sloping dipole. He is experimenting with a tunnel diode TX for 3.5MHz, but is having trouble measuring the very low output power, (try a VTVM Mike). G3YYF has built the G3VTT VFO from the latest SWM, and G4VPF has built the VFO and TX of the PW7 to go with his Century 21 which he has just purchased. G4KKI has built a 40/20 metres TCVR to get QRV on those bands for the first time. Bill has also got digital frequency readout for his SRX30. G3MBN has been building the PW7, S/OXO, and the KL7IAK TTL TX. Brian has also built a 14MHz TCVR with a pair of CB MRF472s in the PA. He says he has also got the W7EL rig working - G4HOM and PA3ALM please note! He has made up his own PCB design which he will share with members for a SAE.

Antenna experiments have also been done, despite the very bad weather winter. G4GDR is using a 133ft inv. L for all bands, and Adrian is interested in making skeds with members on 1.8 and 144MHz. G8JR has made a small improvement to his 3.5MHz half-wave antenna in the loft, by bringing the end 35ft out into the open air. HZ assisted to take Pete´s DXCC to 75 with his HW7. G4UYA has been having trouble trying to get his 18AVT sorted, it won´t work too well on 28MHz. Can any members help Pat? G4PUU has built the Bobtail from SPRAT No.40 and says it works well on 3.5MHz. G4BCY intends trying out a G Whip on his caravan. John has been trying RTTY with his Commodore 64 and his first QSO was with a YO station running 10 watts. G4RVL has been getting excellent results, especially on 3.5MHz, from a W3EDP at 15ft bent around the garden, by using plug in coils for each band.

G4KLQ, using his tri-band vertical, worked VK6. Edd puts it down to the good earths provided by the canals from where he operates. SM7KWE is now using a two element Fritzel MFB 23 Beam, and how about these antennas at the N8ET QTH? 5 elements on 14 and 28MHz at 95 and 105ft. Bill tells me about a friend of his who has a 3 over 3 on 7MHz at 180 feet!!

G3OEP mentions that G3SEP is his son and is QRV from Oman. G3SYC has sent some interesting information on early transistor TXs in response to my plea in the last SPRAT, and G3GJQ (Ex CN8CY) is now in HZ, but unable to get on the air. Roy, in referring to G3IQF winning his trophy, says that Bob has "progressed a little since his clandestine O-V-1 listening activities after 'lights out' at Cranwell in 1947". It appears that Roy and Bob joined the RAF together.

A letter from GM4JJG, in reply to my reference to him working George and me at GB3CPM last summer, reveals why he was confused. Ronnie says he was shaken rigid when he worked us, as he was sitting in the kitchen of a remote Scottish cottage using a random length of 26SWG wire slung out of the window to a tree. A couple of locals spotted it and wanted to know why Ronnie was slinging his fishing line out of the window into a tree!! Still north of the border, G4PUU, in mentioning how much he enjoyed his first CW Club QSOs in the Winter Sports, says he did not work 3 GM QRPers who were rag-chewing on 7030. Cyril waited, and waited.....for them to finish. "They do go on, you know!", he says in his letter. I wonder who they were!!

K7YHA has been modifying his HW8. Rich has worked 24 States on two-way QRP for WAS. G4EPW has done the DJ1ZB mod to his HW7, and says he now has no AM breakthrough on 7MHz, or any mains hum. "Cheers for Ha-Jo", says Les. G4LQF worked W1CFZ with QRO on 14MHz in December. After tea, Norman had a listen on 3.5MHz and heard the same station working an Italian. When he finished, Norman called him and received a 429 report with his 1.5 watts. DK5RY mentions a QSO with G4KIZ in the Winter Sports, who was running 100mW.

G4JFN says he was driving through the Meon Valley at the end of January when he called into the local repeater, GB3SN. This resulted in Bob working Club members G3KJC and G4TMO in a three way, treating the locals to an impromptu lecture on the benefits of QRP. Congratulations to Veronica, wife of PA0GG, who has received the call PA3DWA. She is anxious to get in touch with other XYLs who are licensed. Frans says he hopes to soon have a beacon on 144.060. He says The Benelux QRP Club now have over 300 members, and have a weekly SSB QRP net on 3690, 1030-1200 local time on Saturdays. They often have 20 check-ins and G-QRP-CLUB members are invited to join in, (OK Ian?).

W5QJM has built the HW9, but has yet to put it through its paces. Fred is also very busy producing the ARCI Quarterly, and has made some great improvements in layout and size, seems to be the topical thing to do with QRP magazines! W9PNE has been on the LF bands, (but with QRO he admits!). Brice mentions listening for the unlicensed, but legal, "Lowfer" stations who occupy the 1.6MHz band in the USA, and use an input of 1 watt to a vertical of maximum height 50ft. Brice says he copied a New Jersey station over 800 miles away. When you consider the antenna restriction is the equivalent to a height of 2'6" on 3.5MHz, this is quite an achievement.

G4TJE purchased a homebrew rig at a junk sale for £2, and has reconditioned it for QRP work. He has worked around Europe with it on 3.5MHz. G3IGN (who is the brother of GM4JJG), has been introduced to QRP by using Ronnie's JU6 on 7MHz with an indoor antenna. Leslie has been working around Europe and quite surprised by the results. G4OKB has built the DSB80. Barry also uses a TS830 at 3w for QRP and received a 429 from an EI station who was running 100 watts and was only 529 with Barry. That must prove something about QRP, he says. G4RYC has spent most of his time homebrewing, and says his failure rate is quite high. Take heart Brian, even GM3OXX once told me about a rig he built which didn't work! ZL1ABS, our NZ rep, tells me he became hooked on QRP by reading SPRAT No.24, which he was given to read in 1980. Mike suggests we ought to print something like the cigarette health warning on

SPRAT, such as "SPRAT may seriously reduce your transmitter power"!! G4XYX has been QRV during his first six months on 28MHz SSB with a modified CB TX. He is trying to get to grips with CW with a PW7 - good for you Phil. GW3ATM is using an OXO to an end fed Zepp at 25ft, and OK1DKW says he has not been so active this winter due to the cold weather, as his shack is in the basement. G4EHT had the same problem, but Bill got round it by bringing his HW8 from the loft into his lounge. Petr mentions the formation of an OK QRP Group, more news to follow.

G4MEW/A has been getting out very well with his Argonaut and 110ft doublet at 23ft. Charles uses 600 ohm open wire feeder, and has worked 85 DXCC. He has also made two-way QRP QSOs with VE, ZS and a JA/MM located 500 miles south of Crozet Is. Finally a nice letter from new member G4SSZ, who has just built the STX. With a 14MHz dipole and a FRG7 RX, Derek has been working Europe. He says "An inexpensive and very rewarding introduction to QRP, and many thanks to G-QRP-C for showing the way".

Thanks a million for all your letters, please keep them coming. Don't forget the 17th August, and let me know how your summer goes, by 20th August please.

73's

Chris

EUCW FRATERNISING CW QSO PARTY

This contest is being held over the week-end of 22/23 June 1985 as follows:-

June 22	1500-1700	7010-7030 and 14020-14050
	1800-2000	7010-7030 and 3520-3550
June 23	0700-0900	7010-7030 and 3520-3550
	1000-1200	7010-7030 and 14020-14050

CLASSES:
- A members of EUCW organisations using more than 10w o/p or 5w i/p
- B members of EUCW organisations using QRP (less than class A)
- C Other licensed amateurs, using any power
- D SWLs

EXCHANGES:
- A RST/QTH/Name/club/membership number
- B Same as above
- C RST/QTH/Name/NM (NM means non-member)
- D To claim points, log info exchanges from both stations in a QSO

SCORING:
- A,B and C — 1 point for own country/3 for others
- D — 3 points for each complete logged QSO

MULTIPLIERS: 1 for each EUCW member organisation worked, for all classes

LOGS: Containing usual information and summary sheet to be sent by 31st July to DK9OY, Detlef Reinecke, Katenser Hauptstr 2, D3162 Uetze, West Germany.

EUCW member organisations are SCAG, AGCW, GQRP, TOPS, SARS, BQRP, HSC, VHSC, CWC, INORC, HCC.
Stations may be worked once per band.
Please note that apart from 7030,the frequencies do not include the recognised QRP frequencies of 3560 and 14060. Members may wish to comment on this when they send in their logs!

THE R.S.G.B. NATIONAL CONVENTION 1985

The National Exhibition Centre, Birmingham. April 13th & 14th.

Once again The G-QRP-CLUB will be at The RSGB Convention. The Club will have a small stand and there will probably be a lecture provided by the Club.

In addition to the enrolling of new members, we intend to have the ever popular exhibition of home built equipment. This year I hope to have some of the classical comercial QRP equipment on display. Many people have not seen the full range of what has been available. To this end we would like to borrow some of the following: HW8, PM2, DSB80, DSB160 and any other commercial items you might like to suggest. Offers to G3RJV please. It would be very helpful if members could also offer to provide some items of homebuilt equipment for the display.

This year the RSGB Convention does not include the HF Convention and its usual range of lectures and events. This is to be another event later in the year at which the Club hopes to have active participation. The final date has not yet been announced but (tip!) put a circle round September 29th in your diary, and then wait for news.

CAN YOU GIVE SOME TIME ON THE CLUB STAND AT THE RSGB CONVENTION? If so, let G3RJV know the day and times when you might be able to help.

INTERNATIONAL AMATEUR RADIO UNION

HF QRP Day June 17th 1985

At the 1984 IARU Region 1 Conference, a resolution was passed, "June 17th will be proclaimed as a yearly HF QRP Day. Region 1 will take steps needed to get this day proclaimed as an International QRP Day with the goal that all amateurs, world wide, use low power on that day of the year".

A noble idea! I wonder if the goal will ever be achieved?

The G-QRP-CLUB Support the idea and declare June 17th 1985 A SPECIAL QRP ACTIVITY DAY.

We invite all members to attempt to be active for some time on that day. So dig out the rig, clean up the key and try looking for fellow QRPers on June 17th. It is a working day so no list of times or frequencies will be suggested.
A Certificate of Merit will be presented to the member who submits the longest list of two-way QRP contacts on that day. Another certificate will go to the non UK station who works the most UK QRP stations.

STOP PRESS ..... THE MICRON HAS ARRIVED.
After an initial delay, MICRON kits are now being supplied by WPO Communications. I currently have a kit on my bench in the first stages of construction. A full SPRAT report will follow. My first impression is of the good quality of the kit. The Screen Printed PCB not only has component placings but a blue overmask which aids the accurate soldering of the board. The circuitry is the most sophisicated I have encountered for a direct conversion receiver with built in audio filtering, a full AGC and a PLL VFO. The components are of good quality and the manual gives a step by step guide for the less experienced constructor. I am trying to steal as much time as I can to get this little transceiver on the air as quickly as possible

STOP PRESS ..... Gordon, G3DNF, wins the Partridge Trophy for 1984/5.
This trophy, present by G3VFA is awarded each year for the best club contribution in antenna design. Gordon wins it for his article on a Backyard Broadside, which appeared in the last issue of SPRAT.

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