



SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED TO LOW POWER COMMUNICATION

ISSUE NR. 37 | © G-QRP CLUB | Winter 1983/4

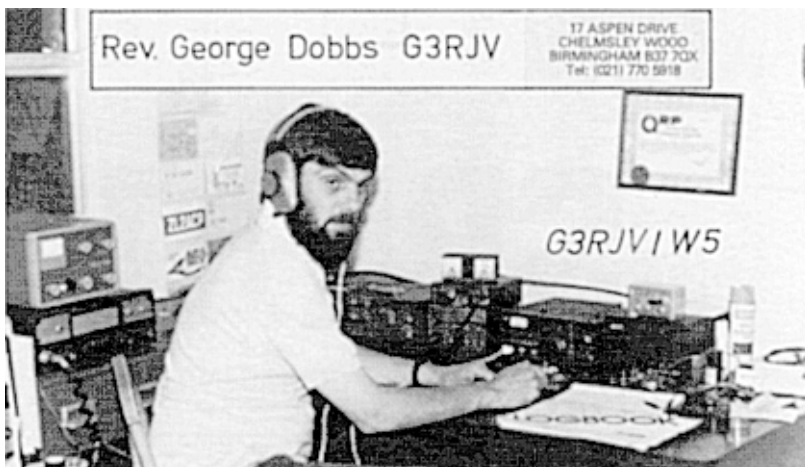


The QRP Speakers at the ARRL Convention 1983, Houston, Texas. [l.to.r.] GM30XX, W0RSP, G3RJV, G4BUE, W7ZOI receive Texas Citizenship.

*Simple 14MHz Receiver - 40M Receiver - Call Program
515 Attenuator - TX LPFs - Wide Band RX Preamp
RF Driver Amp - Scotsman's Antenna - Spider Quad
2M Wavemeter - 2M Beam - VHF SSB News
QRP Diary 1984 - RSGB Exhibition 1983*

RECEIVER SPECIAL





Dear Members

To say that 1983 has been an outstanding year, would be an understatement. The G QRP Club has grown more quickly in the last year than it did over its entire first seven years. We reached membership number 2,000 and are now not far off 2,500. The club stand and QRP lecture were amazingly well received at the RSGB National Convention in March. The RSGB have reprinted the G QRP Club Circuit Handbook and have introduced a QRP column into Rad Com. And then in October, GM3OXX, G4BUE and I represented the club as speakers in the QRP Forum at the ARRL National Convention in Houston, Texas. Quite a year!

The indications are that 1984 could prove to be almost as exciting. We have already secured a stand for the RSGB National Exhibition at the NEC in April and plan a more ambitious display. At the RSGB HF Convention on the first day of the same event, the club is to stage a one and a half hour Home Constructors Forum. Plans are in hand for April and I hope that as many members as possible will meet together at the NEC. There is no indication that the interest in the club is declining, the membership applications keep rolling in. The majority seem to be from newly licenced stations which can only be encouraging.

The bands have been hard hit by the declining sunspot cycle and some older members have wondered if this will could mean a slackening off of interest in low power operation. The club was founded in 1974 (we are 10 years old at the end of '84 - any ideas for marking the event?) when conditions were very flat. It maybe that our direction could alter for a while and inter member QSO on the LF bands will become more popular. By the way the large increase in members has not been marked by a vast increase in QRP stations on 80 or 40 - where are you? - keep trying calls around 3550 and 7030. There has been a considerable rise in interest in home construction, especially of our little 'fun rigs', so perhaps disappointing bands will lead to more soldering iron action. Dont forget to share your ideas and circuits in SPRAT.

Best 73 fer nw

May you continue to enjoy your amateur radio in 1984

G3RJV
G3RJV.

Subscriptions

Renewal (Rates now £3.50 or \$9 US) to Alan Lake, G4DWW, 7 Middleton Cl. Nuthall, Nottingham. NG16 1BX. PLEASE QUOTE MEMBERSHIP NUMBER. Cheques to 'G QRP CLUB'. European members may use Giro Cheques. A reminder will automatically be stamped in sequence onto copies of SPRAT, if you have already paid ignore this notice.

Due: 0-90, 178-200, 254-270, 351-392, 466-524, 619-771, 1000-1081, 1257-1314, 1464-1563

Overdue: 155-177, 233-253, 326-350, 445-466, 934-1000, 1391-1463



G QRP Club 1984 Activity Periods

Spring QRP CW Activity Week-end	17th/18th March 1984
Late Summer QRP CW Activity Week-end	22nd/23rd September 1984
1984 QRP Winter Sports (CW)	26th December/1st January 1985
Late Spring QRP SSB Activity Week-end	5th/6th May 1984

The times (GMT) and frequencies for the above events as follows :-

Time	CW QRG	SSB QRG	Time	CW QRG	SSB QRG
0900 - 1000	14060	14285	1500 - 1730	21060/28060	21385/28885
1000 - 1100	21060/ 28060	21385/28885	1730 - 2000	14060	14285
1100 - 1200	7030	7090	2000 - 2100	7030/10106	7090
1200 - 1300	3560	3690	2100 - 2200	3560	3690
1300 - 1400	10106	14285	2200 - 2300	14060	14285
1400 - 1500	3560	3690			

In addition to the above events members are invited to take part in a weekly Activity Period on Sundays between 1100 and 1230 and from 1400 to 1530 on the International QRP Calling Frequencies (set out above) and on Wednesdays on 3560 from 2000 Local Time (for amateurs in The U.K. and Western Europe).

QRP Diary 1984

21/22.1.84	AGCW-DL Winter QRP Contest (Rules in Sprat No. 37)
4/5.2.84	G. Marconi QRP Phone Contest (Rules in Sprat No. 37)
18/19.2.84	A.R.R.L. International DX CW Contest (Rules in RadCom, QST etc.)
3/4.3.84	A.R.R.L. International DX SSB Contest (Rules in RadCom, QST etc.)
17/18.3.84	G-QRP-CLUB Spring QRP CW Activity Week-end (See Sprat 37 for details)
24/25.3.84	CQ WPX SSB Contest with QRP Section (Rules in RadCom, CQ etc.)
15.4.84	R.S.G.B. Low Power Contest (3.5/7MHz) (Rules in RadCom)
21/22.4.84	A.R.C.I. QRP Spring QSO Party (Rules in Sprat No. 38)
5/6.5.84	G-QRP-CLUB Late Spring QRP SSB Activity Week-end (Sprat 37 for info.)
26/27.5.84	CQ WPX CW Contest with QRP Section (Rules in RadCom, CQ etc.)
15.7.84	R.S.G.B. 3.5MHz Field Day (Rules in RadCom)
21/22.7.84	AGCW-DL Summer QRP Contest (Rules in Aprat No. 37)
29.7.84	R.S.G.B. 432MHz Low Power Contest (Rules in RadCom)
22/23.9.84	G-QRP-CLUB Late Summer QRP CW Activity Week-end (Sprat No. 37 for info)
20/21.10.84	A.R.C.I. Fall QRP QSO Party (Rules in Sprat No. 38)
21.10.84	R.S.G.B. 21MHz CW Contest with QRP Section (Rules in Sprat No. 39)
27/28.10.84	CQ WW SSB Contest with QRP Section (Rules in RadCom, CQ etc.)
24/25.11.84	CQ WW CW Contest with QRP Section (Rules in RadCom, CQ etc.)
1/2.12.84	TOPS CW 3.5MHz Contest with QRP Section (Rules in Sprat No. 39)
26.12.84 to 1.1.85	G-QRP-CLUB Annual QRP Winter Sports (Daily - See Sprat No. 37 for information)

G-QRP-CLUB QSL EXCHANGE: G4BUE will distribute cards for other Club members via the mailings of SPRAT. Please add the Club number of the recipient of the card on the back top right hand corner. This service only applies for interclub QSOs. The cards are sorted by Pam, G4BUE/2 and should be sent to her at "Alamosa", The Paddocks, West Sussex, BN4 3JW, England.

Simple 14MHz Receiver

Ian Braithwaite G4COL

My first contribution to SPRAT is a simple receiver which, although designed firstly for 14MHz, can easily be adapted for other bands merely by altering the tuning components L1 and C1/C2. The receiver consumes more than 20 components, but these are put to good use, since the receiver has a RF amplifier - cum - preselector and an audio CW filter. It is also designed for use with 8 ohm headphones, which many people use these days.

The first experiments showed that 1mV across the author's cheap 8 ohm headphones gave a readable signal. A sensitivity such that 1uVolt signals could be copied comfortably was set as the minimum target. The mixer has a loss of about 7dB, so that a gain of around 2200 (voltage gain factor) is required to get back to 1mV at the output. Some 88mH toroids, which were brought a good few years ago, were then tested, and found to have a DC resistance of 8 ohms or so. The reactance of an 88mH inductor is about 550 ohms at 1KHz. If a Q of 50 can be attained at this frequency, a 1KHz tuned circuit would have a dynamic resistance of $50 \times 550 = 27.6K\Omega$, since dynamic resistance = $Q \times X$ Reactance for large Q's. If a 1KHz tuned circuit is placed round an operational amplifier as shown in the circuit with a 10 ohm resistor to ground (C9 has a reactance of only 1.6 ohms at 1KHz), a gain of approximately 2400 will result. This all worked out in practice. The Q turns out to be around 50, giving a bandwidth of 20KHz between the 3dB points. The audio amplifier has unity DC gain for good DC stability and only low gain at 50/60Hz so that mains hum, which can plague direct conversion receivers, is rejected.

The input RF amplifier provides more useful gain and selectivity. TR1 is a common gate amplifier with a 14MHz tuned circuit in the drain. TR2 is a source follower, providing a transformation without loss between the high impedance of the tuned circuit and the low impedance of the mixer. Note that R5, decoupled by C7, provides a good termination to the mixer for the RF mixing products. Note that in the pre-selector, there is no need to do any coil winding since a 2u2 RF choke (as sold by Maplin) has a reasonable Q at 14MHz. The output of the selective audio stage (see above) feeds emitter follower TR3 via the volume control, providing drive for headphones of 8 ohm or higher impedance.

Unfortunately, 88mH ready wound toroids are not as readily available as they were. A pot core type should be at least as good. Resistance should be added in series with the inductor if the Q is too high, since this will make CW hard to tune and copy

The local oscillator used was a VXO around 14060MHz, about which more later. Any oscillator will do provided that it can provide sufficient drive to the mixer (nominally a 50 ohm load). A drive level of 7dB (500mV) is ideal, but can be some what less before the effect becomes serious.

The receiver was first tested by listening to the band, and gave very good results. Lab tests showed that 0.3uVolt signal could be copied quite comfortably.

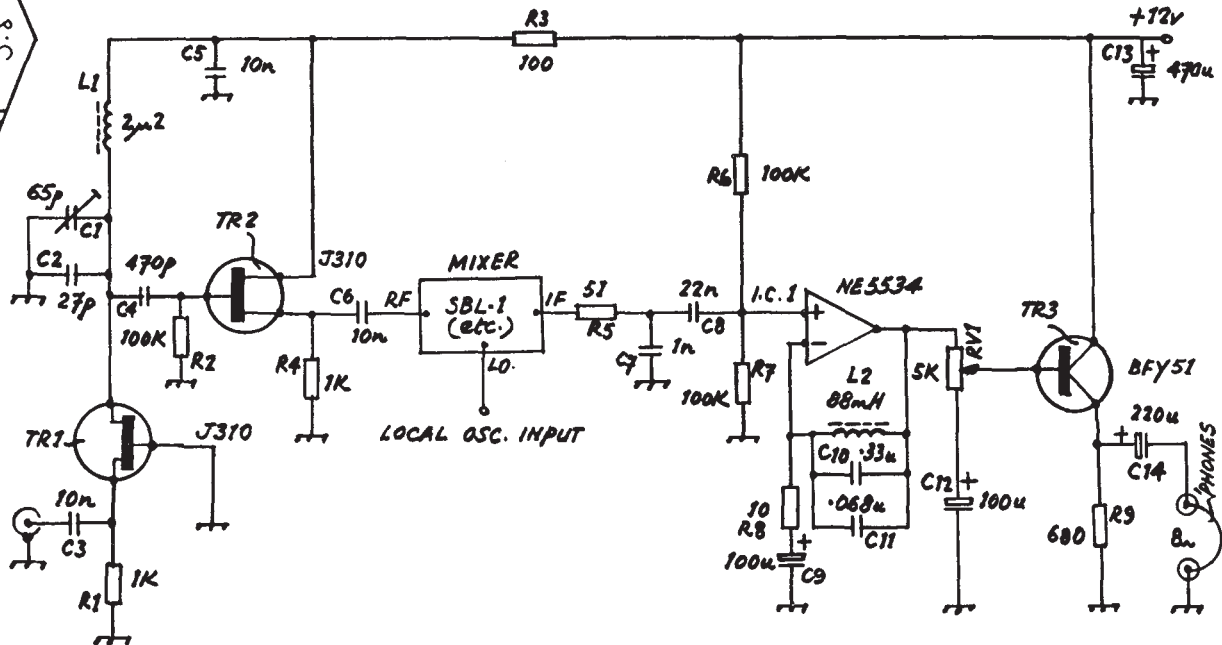
Parts List

R1 1K, R2 100K, R3 100, R4 1K, R5 51, R6 100K, R7 100K, R8 10, R9 680, RV1 5K log, C1 65pF trimmer, C2 27pF ceramic plate or polystyrene, C3 10n ceramic disc, C5 10n disc, C6 10n disc, C7 1n disc, C8 22n disc, C9 100u 16V electrolytic, C10 0.33u mixed dielectric (non-polarised), C11 0.068u mixed dielectric, C12 100u 16V electrolytic, C13 470u 16V electrolytic, C14 220u 16V electrolytic.

TR1, TR2 J310 FET, IC1 Signetics NE5534, Mixer Mini Circuits SBL-1, TFM-2, Anzac MD108. L1 2u2 RF choke (see text), L2 88mH toroid or pot core (see text).

JOHN MCGREGOR, GM3KNX. We regret to announce the death of GM3KNX, club member 132. John was in his 90's and thought to be the oldest active amateur in GM. He was active on CW a week before his death and is remembered for his cheerful willingness to help other younger radio amateurs. A sad lost to the hobby.

CORRECTION: SPRAT 35 - 10MHz Transverter. The "B" arrow signal goes to the input of the bottom circuit stage. The 2N3819 Xtal oscillator is shown with the 0.1uF decoupling cap on the wrong side of the coil L4. The text at the end of the Coil Details section is misplaced from another article and should be ignored.



10

• SIMPLE 14MHZ RECEIVER

• • • G4COL •

Low Power SSB/CW HF Receiver

G4DVI

This project arose for a variety of reasons. I wanted to build a receiver which was capable of being used away from home. This receiver had to be enhanceable to a CW transceiver at a later date. It had to be reasonably simple and inexpensive to build and yet provide good performance. It had also to be capable of being powered from internal batteries.

Various active mixers are available but not all were considered suitable. In order to minimise AM detection due to unbalance a mixer with a balanced input and balanced output was required. The Seimans S042p was chosen because of the low noise figure, (7dB at 100MHz), the very low power consumption, (1 to 2mA), the low number of external components required and the ability to use balanced input and outputs. This device is also quite cheap and is available from Electrovalue. In the circuit here it provides 20dB of gain which reduces the noise figure requirements for the audio amplifier. The mixer is preceded by a two stage top coupled bandpass filter which provides a balanced output. The prototype I built showed no sign of AM breakthrough on 7MHz after dark when connected to a G5RV, and yet was capable of detecting signals below the microvolt level.

To tailor the passband some form of audio filtering is required. It is arguable that the ideal method is to use real tuned circuits since these are unlikely to overload and hence produce intermodulation distortion at the signal levels which can be expected here. In practice, however, it is preferable to use so called "active" filters unless ultimate performance is sought since operational amplifiers, capacitors and resistors are easily obtainable and relatively cheap. Furthermore filtering and gain can be combined.

The audio amplifier used here is an Integrated Circuit, the LM324. This contains four, well isolated operational amplifiers, yet consumes only 2 to 3mA in total. This is configured as follows:-

The first stage is a simple balanced input amplifier with a gain of 46dB which also performs as a low pass filter. It provides up to a theoretical maximum of 46dB rejection of unbalanced signals, such as hum, depending on component tolerances. (This can be improved at the expense of an extra amplifier and so was not considered worth the trouble). It is connected to the mixer in such a way as to provide both low pass and high pass filtering so that, in total, frequencies at its output are attenuated at 12dB per octave above 1800Hz and 6dB per octave below 300Hz.

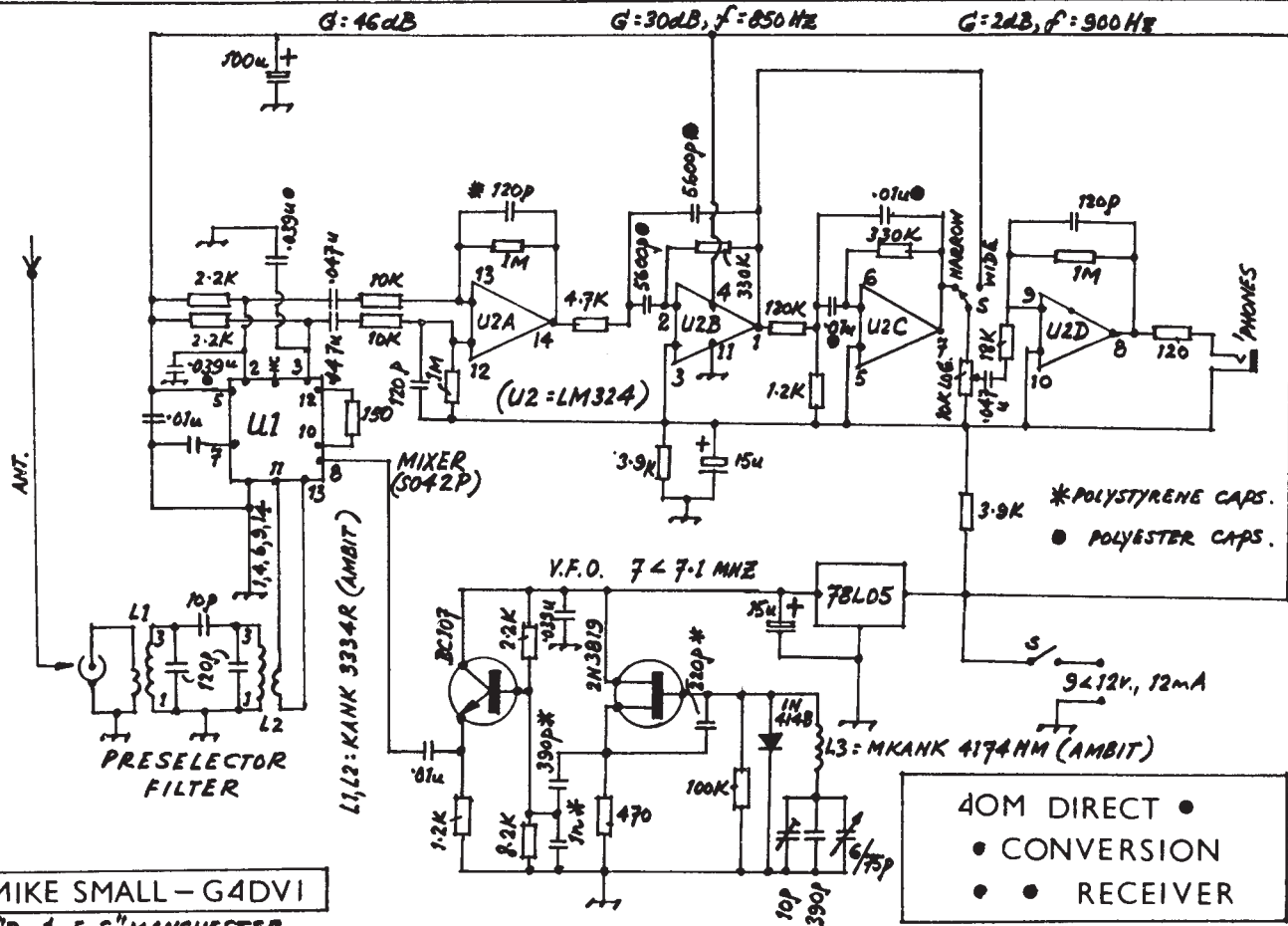
The second stage is connected as a bandpass filter with a gain of about 33dB and a centre frequency of about 850Hz. The filter has a relatively low "Q", this being about 4. Although this filter is optimal for CW reception, it works quite well with speech, (SSB). It has the advantage over a low pass filter that low frequencies are further attenuated so that hum and noise are again reduced.

The third stage of the amplifier may be switched in or out as required by the "Wide/Narrow" switch. This is another bandpass filter with a centre frequency of about 900Hz but virtually no gain. In the "Narrow" position very good selectivity of CW signals is obtained.

The fourth stage of the amplifier is preceeded by the AF gain control. It provides up to a further 35dB of gain. A further amount of low and high frequency roll off is provided. This stage is intended to drive high impedance headphones or a crystal earpiece.

Overall gain of the mixer and amplifier is in excess of 120dB. This was confirmed by measurements with a signal generator which showed that a 1 microvolt signal produced more than 1 volt into the earpiece. Noise at this level was about 20dB down. Although such a large amount of gain is obtained from a single IC, and although the whole circuit is built on veroboard, there has been no trace of instability.

The oscillator used is the capacitively coupled circuit much favoured by amateurs. The component values shown gave a frequency swing from just below 7MHz to just



MIKE SMALL - G4DVI
 "R. & E.S." MANCHESTER

above 7.1MHz. Although tuning by means of varicap diodes is attractive from a cost viewpoint acceptable frequency stability is difficult to obtain when these are used. Hence tuning is effected by means of an air spaced tuning capacitor and a 6:1 epicyclic drive. This has been found to provide adequate band spread and is relatively simple to construct.

Output from the oscillator is taken by means of a capacitive tap on the tuned circuit. This is to reduce the harmonic content, which is otherwise quite high since the circuit operates in Class C, and to reduce the coupling between the oscillator and the output. The output level is about 100mV. The supply voltage to the oscillator is stabilised by a 5 volt regulator circuit 78LD5. The frequency of the oscillator is very stable both against time and voltage providing the supply voltage exceeds 7.5 volts. The oscillator, buffer and regulator consume about 7mA in total.

The details of the design and the component values are shown on the circuit diagram. All resistors are 1/3 watt types, the capacitors used to tune the filters, RF and audio, should be polyester, polystyrene or mica. The oscillator fixed tuning capacitors should be polystyrene for correct temperature compensation. All components, with the exception of the coils, are obtainable from Electrovalue. The coils are obtainable from Ambit.

I am very pleased with the results obtained. Given the cost, which for the electronics is about £10, and when all the mechanical components are included is under £25. I found that the performance compared favourably with a conventional superhet. The image response was not as much of a problem as it theoretically should be. Lack of AGC was not a problem using an earpiece or headphones. If a loudspeaker was used a tolerant family and neighbours would be an advantage. Unlike a conventional black box this only requires a PP3 as a power source.

Electrovalue Ltd., 28b St. Judes Road, Englefield Green, Egham, Surrey, TW20 0HB
Ambit International Ltd. 200 North Service Road, Brentwood, Essex, CM14 4SG

G-QRP-CLUB CALLSIGN CHECK LIST PROGRAMME (ZX81).

This programme uses six lines to execute, plus one line for each member. If the membership gets above 4978 (or whatever it works out at), then move lines 4999 and 5000 to 5999 and 6000 etc., if memory is sufficient. This can easily be updated. Should two or more stations have the same last digits, then two entries should be made in one line e.g. 23 IF A\$ = "ADZ" THEN PRINT "PA0ADZ, Kees, Ren, No. 1566.....spaces to next line on screen....GW2ADZ. Daffyd. Cardiff. No. 9876, etc.

```
5 REM "G-QRP MEMBERS CHECKLIST"
6 REM "BY G6WKK GODFREY"
10 CLS
15 PRINT "ENTER LAST DIGITS OF CALL SIGN"
18 INPUT A$
20 CLS
21 IF A$ = "NPQ" THEN PRINT "G4NPQ. GEOFF. SELBY. NO. 1564"
22 IF A$ = "MDA" THEN PRINT "G6MDA. ALISTAIR. TAMWORTH. NO. 1565"
23 IF A$ = "ADZ" THEN PRINT "PA0ADZ. KEES. REN. NO. 1566"
ETC.
4999 PAUSE 500
5000 GOTO 10
```

Chris, G4BUE has tried this programme on his Vic 20, using the same Input A\$ but without the CLS lines, and finds it works fine. He has modified the information just to read the full call sign and membership number. He tells us he intends using it for his wife Pam to quickly find the Club numbers of members for whom she receives QSL cards without numbers on.

COMPUTER PROGRAMMED AMPLIFIER - SPRAT 36: Brian, G3SYC reminds us that this program was designed for a BBC computer and may require adjustment for others. In the example, after "R1 is 393" the next parameter is RE, not R1 again.

Fitting an Attenuator to the Argonaut 515

9

Mark Goodfellow G4KUQ

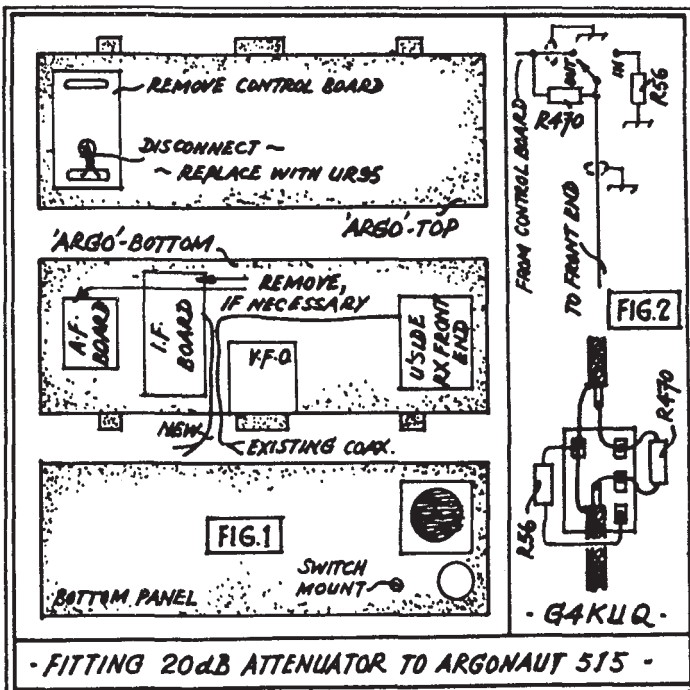
Having found real problems with overload and cross modulation with the Argonaut it was felt that some form of attenuator would be useful for use with the lower bands after dark. The following description is of the method used at this station and is for a bare bones, no frills, one position, 20dB attenuator. It would be possible to provide for a variable system, but it was felt that it would be better kept as simple as possible.

Results have been fantastic with stations that were inaudible, now clear and workable. The inclusion of this mod has transformed the receiver.

Method

1. Locate the coax cable leading from 80537, Control Board to the receiver front end - disconnect and remove from the control board end and bring to the front of the set, See Fig. 1.
2. Fit an extra length of coax (UR95 is suitable) to the receiver pin on the Control Board socket.
3. Drill a 6mm hole in the bottom panel as Fig. 2 and fit a subminiature toggle or slide switch.
4. Wire the components as shown and allow a little extra to move the panel around - reassemble the rig.

As shown approximately 20dB attenuation will result and the small hole does not detract from the value of the rig. I used a subminiature toggle and as I use the rig up on the stand there is plenty of room to operate it. It would also be possible to fit it on the side of the rig in the plastic side panels.



50ohm Low Pass Filters for Transmitters

Ed Wetherhold W3NQN

In The Summer 1983 issue of SPRAT, Doug DeMaw, W1FB discussed a problem many QRP operators are completely unaware of - the presence of excessive harmonic levels at the output of their QRP transmitters. Doug mentioned that the typical solid state Class C amplifier has second and third harmonic current levels that are only 10-13dB below the fundamental frequency! A 50 ohm five element harmonic filter was recommended for connection at the transmitter output to provide at least 30 dB of harmonic attenuation, and equations were given to solve for the component values. For more elaborate filters, the reader was referred to the normalised filter tables in The A.R.R.L. Radic Amateur's Handbook.

Those who wish to have an additional 12 dB of harmonic attenuation over that of the five element filter, and who wish to omit the calculations will find the data in Table 1 to be of interest. Here are fifteen designs of 50 ohm seven element Chebyshev low pass filters suitable for use by The U.K. amateur. This table was comprised from three recently published articles which listed all filters that could be constructed with standard value capacitors. From these published tables, fifteen designs were selected that best meet the requirements of The U.K. amateur.

Most of the column headings in Table 1 are self explanatory. The F-co column heading lists the ripple cutoff frequencies, while the F-3 and F-40 dB frequencies are those frequencies at the 3 and 40 dB attenuation levels. The R.C. column lists the reflection coefficients of each filter. Up to the cut off frequency (F-co), the reflection coefficient listed under R.C. will never be exceeded. The capacitor and inductor component values follow after the R.C. values. The publication reference source and the design number used in the reference are given in the last three columns. These references are internationally distributed and should be available in The U.K. if one wishes to confirm the listed designs.

Several designs are listed for each amateur band with the intent that the reader use the design which is most convenient to assemble. Only the commonly available 10% series of capacitors are required (except for C3, 5 in design 6), and all designs have less than 1.15 VSWR (corresponding to a reflection coefficient about 7%). For best results, use silver mica or polystyrene capacitors having a 5% tolerance. Between 30 and 40 dB of harmonic attenuation is available one octave above the cutoff frequency as can be seen by the entries under the F-40 dB column heading.

Although the seven element filter requires two additional components compared to the five element filter, the advantages of greater harmonic attenuation, more convenient capacitor values and the absence of calculations greatly outweigh the disadvantages.

The seven element network configuration is that of a ladder with alternating shunt capacitors and series inductors. From left to right, the network branches are labelled 1 to 7 with all odd branches containing a shunt capacitor and all even branches containing a series inductor. Because the numbers refer to the branches, there are no even numbered capacitors and no odd numbered inductors; consequently, the reader should not be confused by the non-sequential numbering of the capacitors or of the inductors. That is, there is no C2 and C4, or no L1, L3 and L5. This numbering derives from the commonly accepted network numbering procedure where the branches are numbered sequentially. The capacitor or inductor in a particular branch then assumes the number of that branch.

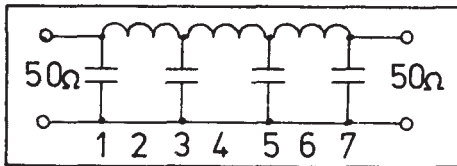


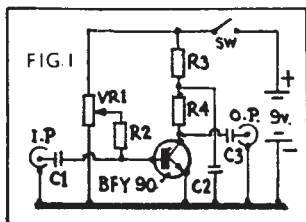
Table 1. 50-ohm Lowpass Filters Using Standard-Value Capacitors (for Amateur Radio Transmitters)

No.	Bands ¹ (MHz)	F-co	F-3dB	F-40dB	R.C. (%)	C1,7	C3,5	L2,6	L4	Publication & Design No.		
		(MHz)				(pF)		(μH)		EDN ²	ELECTRONICS ³	QST ⁴
1	1.825-1.830	2.022	2.34	3.7	4.11	1200	2700	5.41	6.40	162	44	160M
2		2.155	2.76	4.6	1.175	820	2200	4.44	5.61	55	53	---
3	3.5 - 3.6	3.694	4.24	6.66	4.64	680	1500	2.99	3.52	192	74	---
4	3.6 - 3.8	4.125	5.11	8.38	1.74	470	1200	2.43	3.01	85	83	---
5		4.719	5.35	8.34	5.50	560	1200	2.37	2.76	202	84	---
6	7.0 - 7.04 7.04- 7.10	7.225	8.40	13.3	3.86	330	750	1.51	1.79	226	108	---
7		7.362	9.04	14.8	1.93	270	680	1.38	1.70	115	113	---
8		8.583	9.60	14.8	6.875	330	680	1.32	1.52	232	114	---
9	14.0-14.1 14.1-14.35	14.40	16.4	25.6	5.16	180	390	0.773	0.904	142	24	---
10		17.46	22.5	37.5	1.11	100	270	0.545	0.689	45	43	---
11	21.0 -21.15 21.15-21.45	21.55	27.6	46.0	1.175	82	220	0.444	0.561	55	53	---
12		25.24	28.9	45.4	4.712	100	220	0.438	0.515	172	54	15M
13	28.0 - 28.2 28.2 - 29.7	30.90	35.4	55.5	4.775	82	180	0.359	0.421	182	64	---
14		31.65	40.5	67.5	1.19	56	150	0.303	0.382	75	73	---
15		36.94	42.4	66.6	4.64	68	150	0.299	0.352	192	74	10M

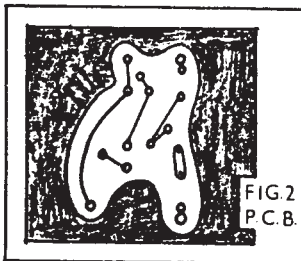
NOTES:

1. Frequency bands taken from Table 19.7 (Region 1 HF Band Plan), p. 19.5, *Radio Communication Handbook*, 5th Edition, RSGB, 1982.
2. *EDN*, Vol. 26, No. 1, pp. 187-190, 7 January 1981.
3. *Electronics*, Engineers' Notebook, pp. 160-161, 19 June 1980.
4. *QST*, p. 45, December 1979.

A Wide Band Untuned Pre-amp

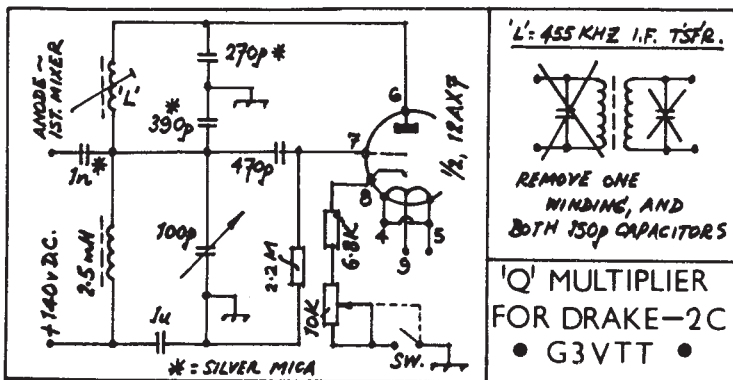


Len Colley
G3AGX



A WIDEBAND UNTUNED PRE-AMP By Len Colley, G3AGX (From WACRAL Newsletter)

No coils and no tuning problems with this. It operates from 3.5MHz to and including 144MHz, giving an average gain of 18/20dB. Highly successful results here at H.Q., it was amazing. Made up a couple of years ago, and is used as a pre-amp for a home-brew frequency counter. It also works well as a receiver pre-amp, providing you are not interested in selectivity. Fig. 1 gives the circuit and Fig. 2 gives the underside view of home-brew printed circuit board. Transistor is BFY90 (this type is essential). C1 - 0.01mfd, C2 - 0.01mfd, C3 - 0.01mfd, VR1 - min. pre-set 2.2K, R2 - 6.8K, R3 - 56 ohm, R4 - 330 ohm. Switch on, check supply current is between 10 and 20mA, fit amplifier in front of receiver, tune around 5 to 10MHz and adjust VR1 for maximum S meter reading. Check again at 144MHz and possibly adjust VR1 again. Use co-ax input and output cables, and keep the cables to minimum length. Keep the BFY90 leads short.

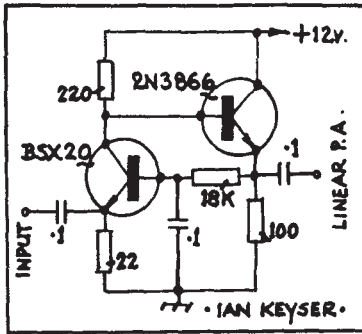


Without any doubt the best receiver I have is the old trusty Drake 2C, which I bought for £50 a few years ago. I have spent a lot of time building various accessory units for it, e.g. Auxillary band crystal box, 160 metres converter, and the latest, an add on Q multiplier.

The circuit is a copy of the Drake 2 CQ with a few 'Anglicised' variations. The biggest problem was getting a tapped coil. However, I used an old IF transformer from a pre-war military radio, I think it was a No. 11 Set or something, with its 150pF tuning capacitor removed and replaced with the 390 and 270pF values shown.

Luckily Drake have put a Q multiplier socket on the rear chassis drop of the 2C. I think the circuit should work well with any valve receivers that members have. Simply set the 10K control for IF 'Q' and adjust the tuning control across the IF pass band for a peak on the desired signal.

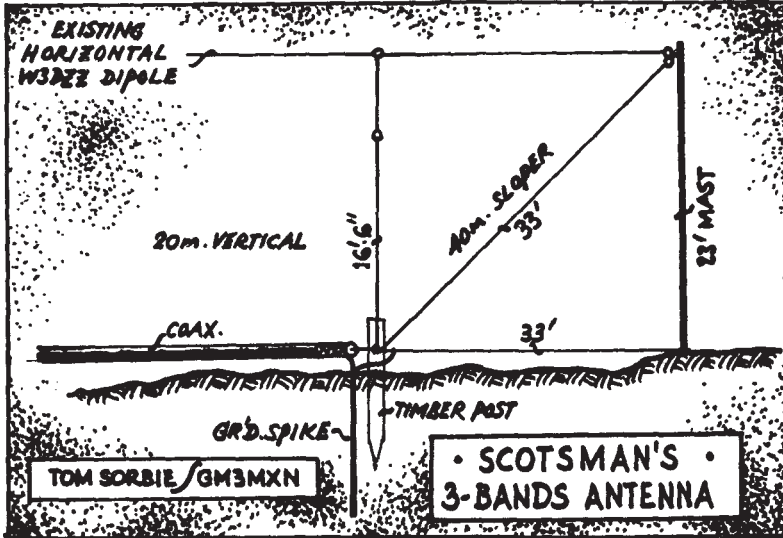
After a few years of playing with transistors it makes a welcome change to return to valves, I wonder if these 2N12AX7's will ever catch on?



RF Driver Amplifier

Ian Keyser G3R00

A little circuit built up by Ian on a visit to the G3RJV QTH earlier this year. It would be ideal as a pre-driver stage from a G3ZVC or G4CLF SSB Board into a QRP Linear Amplifier.



Lately I thought about buying a three band vertical, but being a mean Scot I thought about the money and decided to make the following, which is what I came up with. It works a treat over my trapped dipole.

Part of the antenna was shown by Chris, G4BUE, in his 40 metres sloper system, Fig. 5 of the Winter 1980 Sprat. On 40 metres the SWR is 1:1.5, on 20 metres it is 1:1 and on 15 metres it is 1:1.3

The coax screen is connected to a ground spike and to the lower half of the sloper. The coax inner is connected to the sloper and 20 metre vertical. The antennas are tuned by trimming them for the lowest SWR

COMPLETE STATION SALE:

Rich Arland, G5CSU, is moving to TA land in the spring, no recip licence so has the following items for sale:

Argonaut 515 with 10M xtal options, xtal calib, cw filter, PSU (110v): £300

Memo Keyer from QST PCB with data: £30, Bencher Paddle: £30, Addnis Desk

Mic: £25 (or all of the above for £350)

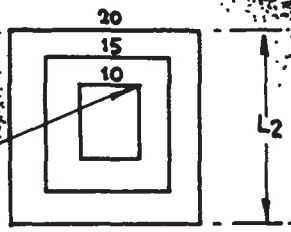
R600 RX (VLF to 30MHz): £190, MFJ 160-10 ATU (suitable coax, endfed, Bal feed): £15,

Ten-Tec AC4 SWR and AC5 ATU in Argo 509 styling: £15 the pair,

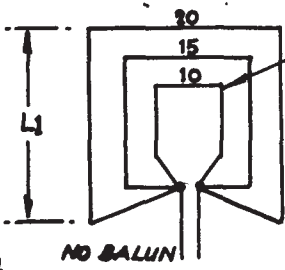
IC 202S 2mtr SSB (3w pep w/SATCOM xtals, tuned at Pye Camb to .18uV @ 10dB s to N very sensitive): £90, Newmarket (0638) 667055

G-QRP-C. 355

SPIDER QUAD

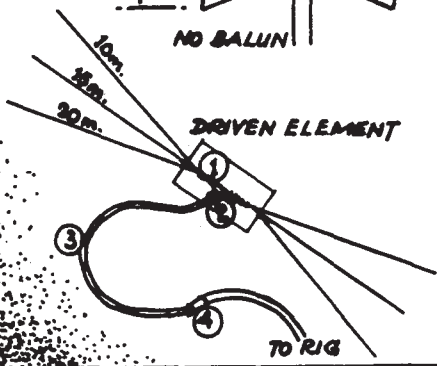


CLOSED LOOP
NO STUBS



NO BALUN

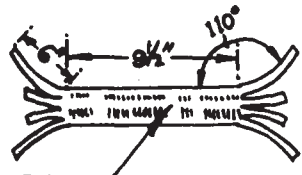
BAND	SIDE DIMS. $L_1 = \frac{250}{F, \text{MHz}}$	SIDE DIMS. $L_2 = \frac{250}{F, \text{MHz}}$	SPACING $S = \frac{118}{F, \text{MHz}}$
20	17' 8"	18' 2"	8' 5"
15	11' 8"	12' 3"	5' 7"
10	8' 8"	9' 1"	4' 2"



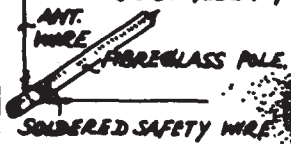
DRIVEN ELEMENT

TO RIG

- ① - 2"x4" PLASTIC SPACER; DRILL 6 HOLES, WEAVE WIRES TO STRENGTHEN
- ② - COAX. FITTING TO ALL WIRES
- ③ - 7' 8 1/2" OF RG59, 72Ω COAX. THIS IS ELECTRICAL 1/4 FOR 15 METERS.
- ④ - COAX. CONN. TO 52Ω TRANSMISSION LINE



1 7/8" O.D. STEEL PIPE



W6SKQ

AN UNUSUAL REQUEST.

Skip, W800MM, who has the distinction of being the original American member of the G QRP Club, recently asked me to trace a copy of an out of print UK science fiction paperback. So far my efforts have not located a copy. The book is: 'Alternative 003' by Leslie Watkins (Sphere 1978). If any member can help please contact G3RJV. Expenses will be refunded.

FOR SALE: ARGONAUT 509 Transceiver - good working condition - £195 owner Leo, KC5EV, but should be in the UK by now so contact G3RJV.

WANTED: Bmk2, AMK2, AMK3, AMK4, Mk123 Good price paid for complete set. Ring G3NYE 061-863 6263 between 8am and 4pm or write: Mr. A.J. Taylor, 49 Hawthorne Rd. Gat.ey, Cheshire.

FOR SALE: Heath HW8 QRP Transceiver, PSU, ATU, Phones, SWR meter, Key: £90 ono. G4MPK QTHR Phone Leatherhead 0372 375514.

The Spider Quad Bob Spidell W6SQK

Shown is a recommended support item for the spider quad. It is 1 1/2" outside diameter O.D. steel pipe cut on the ends in four to make an angle of 100 degrees which would give approximately 0.15 wavelength spacing.

Eight 14 feet fibreglass poles would make up the spreaders and drill through the poles for suggested length. Diagram number 2 shows that it is recommended to use safety wire where the antenna wire passes through a hole so that the antenna will not sway. The fibreglass poles fasten to the centre support utilising hose clamps. Rigidity of the complete antenna system can be accomplished by tying off each corner with very strong fishing line or small nylon cord.

Band	Side Dimension L1 = $\frac{250}{f(\text{MC})}$	Side dimension L2 = $\frac{258}{f(\text{MC})}$	Spacing S = $\frac{118}{f(\text{MC})}$
20	17' 8"	18' 2"	8' 5"
15	11' 8"	12' 3"	5' 7"
10	8' 8"	9' 1"	4' 2"

1. Plastic spacer about 2 x 4 inches, drill six holes and weave the wires for added strength.
2. Coax fitting attached to all the wires.
3. 7' 8 1/2" of RG59 (72 ohm coax). This is electrical quarter wavelength for 15 mtrs.
4. Coax connector to 52 ohm transmission line.

Award News

QRP MASTER. Congratulations to G3IQF and F6PZL on obtaining this Award. There are now 15 holders of it.

QRP WAC. K9PNG, W6SKQ, ZS6PT, G8JR.

QRP Countries. 100 YD2SB, K9PNG, W6SKQ; 75 G3IQF; 50 SM7KNM, G8JR;
25 G8JN, G4MBO (2 DXCCS in one post amongst those !)

Worked G QRP Club. 140 G8PG; 100 GM3JKO; 80 CT4CH; 60 F6PZL;
40 G4MBO, G4EZF; 20 G3FCK, YD2SB, G4OTW.

Two-way QRP Award. 20 G3IQF; 10 G8JR, G4MBO.

CW Novice Award. So far 30 recently licenced operators have received this Award, including KA6WKLJ and KA7QAG.

AWARD APPLICATION REMINDERS.

Power limits are: cw 5w dc input and/or 3w rf output; ssb 10w pep.
FEES 50 p STERLING OR ONE US DOLLAR. NO CHEQUES PLEASE (UK members can send four, 12 1/2 p stamps per Award or endorsement). Always include for each Award a list of call signs of stations claimed in alphabetical order, and a signed power declaration. Remember that for Worked G QRP Club BOTH stations must have adhered to the power limit, and the power must appear on each QSL card (unless it was an HW7, HW8, Argo or JUG). All contacts must be 100% QRP - no calling on QRO then reducing power. In the past non-adherence to these simple rules has caused endless unnecessary work for your Award Manager. Please help him to help you !

The RSGB National Exhibition 1984

Those of us who attended the R.S.G.B. NATIONAL CONVENTION at the National Exhibition Centre generally agreed that it was one of the best amateur radio events for many years. Following that success, the RSGB has booked the NEC for the same event in 1984. So book the dates now.....

RSGB NATIONAL AMATEUR RADIO EXHIBITION APRIL 28th and 29th 1984
National Exhibition Centre, Birmingham.

The G QRP Club Stand was an outstanding success in 1983 - we were over run with visitors and enrolled about 300 new members in 2 days. The RSGB have offered us a stand for the 1984 exhibition, we have accepted and plans are already in hand to stage an even better club exhibition.

The RSGB H.F. CONVENTION will once again form part of the event with a programme of lectures and presentations. It is very gratifying for the club that one of our members, Derek Thom, G3NKS, is now Chairman of the RSGB HF Committee. At the request of that committee, the G QRP Club are to stage a 1½ hour HOME CONSTRUCTION FORUM on the afternoon of April 28th.

THE G QRP CLUB was very well represented in 1983 and we hope that lots of members will attend the event, visit the stand and enjoy the forum. Impressed by the social aspects of the ARRL Convention in Houston, I would like to arrange a G QRP CLUB DINNER on the evening of Saturday April 28th. As most members drive home from the exhibition at the close, this would be at about 6.30pm. I have already been asked if this can be at a chinese eating house in Solihull previously used by club members - but this is open to suggestions! If you intend to be at the exhibition and would like to join in a club meal, could you please send your name and numbers for the meal to G3RJV by not later than February 14th, 1984. I would hope to announce firm details in the spring SPRAT due out on March 31st 1984. Following the meal, members who have the time might like to enjoy the hospitality of the G3RJV QTH (or at least as many as we can pile into it) as the RSGB are kind enough to choose a venue only about a mile from the RJV household. Some light eatables and drinks will be available around the house and shack and members who happen to bring some bottled refreshment will have an even warmer than usual welcome.

THE CLUB STAND will be open throughout the two days and members who would like to offer an hour or two staffing the stand are asked to contact G3RJV suggesting which day and roughly what portion of that day they are prepared to remain on the stand. Local help may also be required to erect the stand on Friday 27th and after closing time on Sunday 29th to clear the site.

WE LOOK FORWARD TO SEEING YOU IN APRIL 1984.....

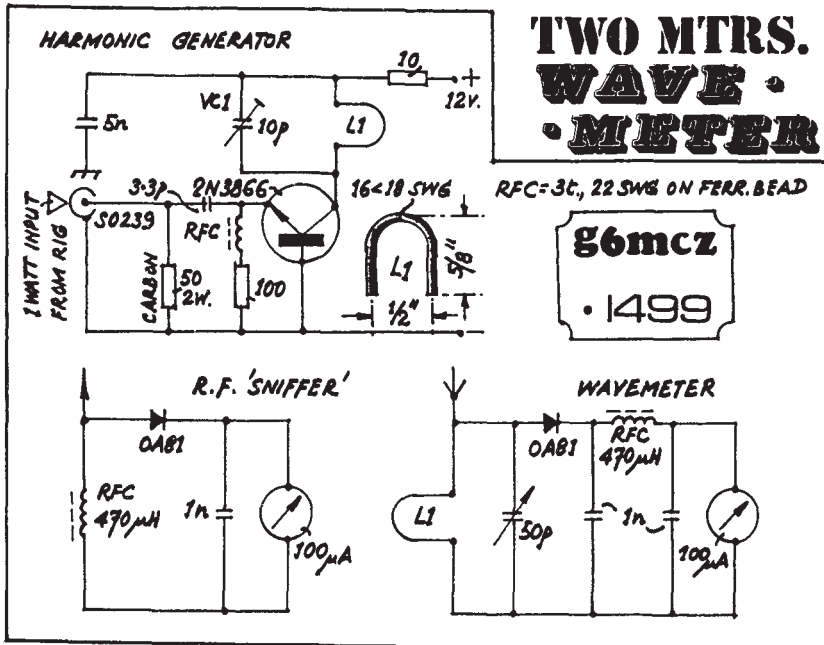
The Last ARGONAUTS

I have received a letter from Rowley Shears, G8KW, of KW Ten Tec Ltd. about the last remaining production sets of the ARGONAUT 515 Transceiver. Ten Tec (USA) ceased production of this QRP Transceiver earlier this year and KW have bought the last remaining production models.

KW Ten Tec Ltd. are now left with a handful, which are offered at a reduced price (Argonaut 515: £296.40, Power Supply 210: £26.00, ex. VAT). Perhaps some members will like to obtain the Argonaut 515 before this well known and proven design disappears from general availability.

KW Ten Tec also sell the replacement to the Argonaut - The ARGOSY II which permits approved QRP operation by means of a 50/5 watt pep switch. When in the 5 watt position, power can be further reduced by means of the 'drive' control and the calibrated power meter on the front panel.

KW Ten Tec will forward all details to members if they write or telephone:
KW TEN TEC LTD. Vanguard Works, Jenkins Dale, Chatham, Kent. ME4 5RT.
Medway (0634) 815173



2 METRE WAVE-METER CALIBRATION By Geoff Gardner, G6MCZ

Most newcomers to Amateur radio will, like myself, make straight for the two metre band. To comply with our licence we require a wave-meter that covers 144 - 288MHz or more, 288MHz being the second harmonic. Commercial wave-meters cost about £15 - £20, whereas a home-made one only costs about £3! The difficult part about making a wave-meter is the calibration of the second harmonic point on the dial.

Here is a circuit that can be connected to the output of a 2 metre 'black box', to generate the second harmonic.

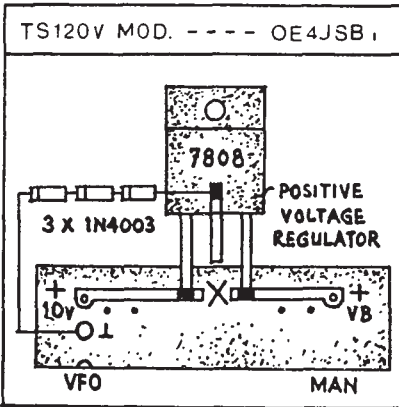
R1 is a dummy load and can be 47 or 51 ohms carbon resistor at two watts. RFC is three turns of 22 SWG on a ferrite bead and TR is a 2N3866.

Set-up and Use:-

1. Connect a 12 volt supply.
2. Connect your rig to the S0.239 and do not put more than 1.5 watts into this circuit.
3. Place a RF sniffer near L1 and key the microphone, adjust VC1 for maximum reading on the RF sniffer.
4. As you can see the RF sniffer can become a wave-meter and use the same components. Do not go to a lot of expense over the above circuits, or you will defeat the object!

Calibration :-

After the harmonic generator and wave-meter have been constructed, calibration can begin. First, check that the wave-meter responds to a 144MHz carrier. If the vanes of the 50pF capacitor are almost fully meshed at this point, all is well, and you should be able to find the second harmonic with the tuning capacitor near minimum (un-meshed).

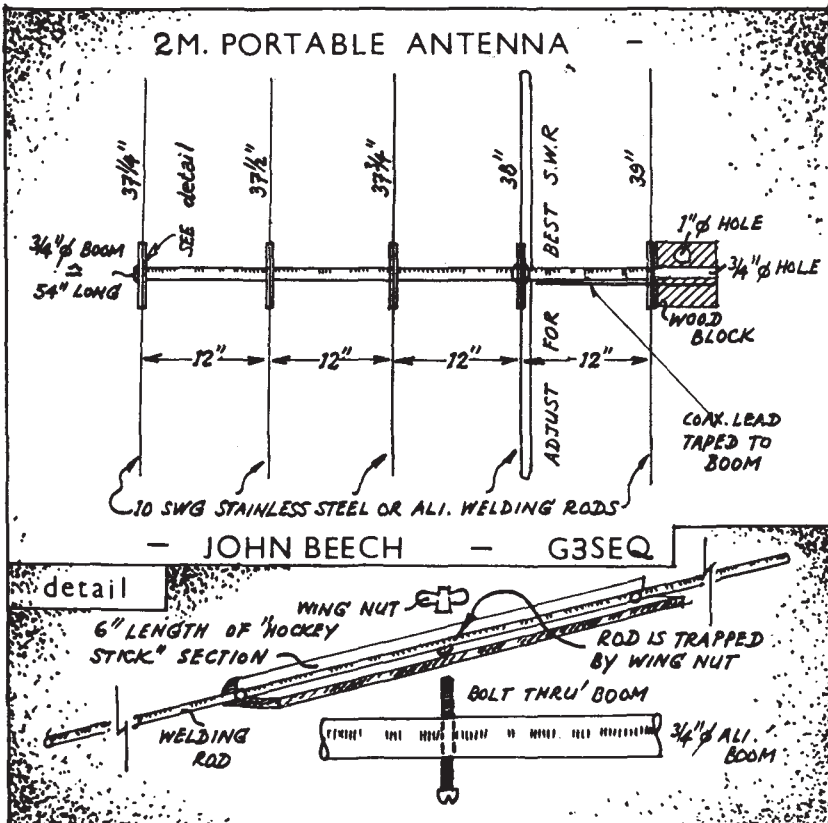


When transmitting with the above transceiver during current peaks the dial and 'S' meter lights tend to darken. This can be eliminated by stabilising the voltage feeding the lights with an IC regulator.

1. Cut through the copper foil on the VOX/ALC/VFO printed circuit board and install a voltage regulator. A 10 volt 0.5A type is needed, however a 8.2 volt type can be used, as indicated in the drawing.

2. Short circuit the resistor R112 (330 ohm) which is next to the plug J4 on the top of the board AF/GEN UNIT. If the idea of removing any of the circuitry is frowned upon, it is possible to remove the lacquer

from the resistor body and make a short circuit connection across the resistor. The dial lights are now powered from a 10 volt supply and will only begin to light if the transceiver is operated from 11 volts or higher. If the transceiver is used from a battery supply when the lights do darken, it will now be an indication that the battery needs recharging. The drawing shows three diodes used with the regulator as an 8.2 volt type was available. They are used to increase its working voltage.



VHF News John Beech G8SEQ

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

Now that the HF bands are not so good because of lack of activity from old Sol, we might attract a few more Class A's onto the VHF bands where the DX may not be as far away, but just as difficult to wheedle out. My recent experiences have shown me that you have either got to be very patient or just plain lucky to work the DX during a lift on two metres.

While on holiday in The Forest of Dean this August I managed to work a couple of Dutch stations from what looked like an unpromising site, surrounded by trees and in a slight hollow.

On the construction side I have received an interesting little board from Mike, ZL1ABS which I have put together and it seems to go OK. I haven't got around to making the companion transmitter board up yet, which all fits into a two inch square section plastic drain pipe. The rig is a FM unit with three crystal controlled channels, but it could easily be adapted to VXO operation. The Club is currently negotiating to make boards available in this country, as the rest of the components are readily available here.

Ed, N5EM has also sent me a paper design for a 14/144MHz transverter which he intends building, so that may appear in Sprat some time in the future.

For those of you that own early models of the IC202, there is a very simple mod which allows the SSB out of the external VFO socket when you select the VFO position on the front panel. To do this mod all that is required is to solder two short lengths (10mm or 1/3 inch) directly to pins 5 and on IC7, SN76514N. Then transfer the coaxial lead from J16 and J17 to the new pins on IC7. Either vero pins or 14SWG wire should be used. While the wires from J16 and 17 are in this position the transmit section of the 2m rig is disabled, so there is no need to operate the rig into a dummy load. The 10.7MHz signal can be mixed with whatever you like. I am currently working on a 432MHz transmitter, but it would easily be possible to get phone onto the HF bands. No doubt the same mod could be done on later IC202s, but you would have to fit your own output socket. It would also be easy to switch the coax over so that it would not be necessary to slip the covers off every time you wanted to revert back to two metre operation.

For those of you interested in two metre portable operation, try this for an antenna. The whole lot can be made in less than an hour and takes less than five minutes to erect!

2M Beam [see previous page]

5-5 report over 150 miles, 3W PEP first time out!

When the wing nut is slackened the director and reflector can be folded up and telescoped. The driven element also folds flat against the boom.

CORRECTIONS AND ADDITIONS TO THE HELICAL ANTENNA ARTICLE (Sprat No. 36) By Ben Johannson, CT4CH

1. The capacitor in the matching network should have been shown across the input.
2. Alternative method of matching. On 15 metres it is possible to use a 4:1 balun (50 ohms in and 12.5 ohms out) between the feeder and the antenna, thus eliminating the matching network.
3. A simple way of resonating the antenna is to cut one or more of the wires connecting the "spokes" of the capacity hat at each end of the antenna together. Each time this is done the resonant frequency is increased.
4. With the capacity hats fitted the small coils described in the original article are not now needed on 15 metres.
5. If a 20 metre version using 2 x 120 turns is constructed and fed via tuned open wire line all five amateur bands between 14 and 28MHz can be covered by suitably tuning the feeders.
6. As printed in SPRAT, the diameter of the capacity hats looks like 58cms, it is actually 50 cms.
7. Who will be the first to use this idea for a miniature two element beam?

SSB News Ian Keyser G3R00

Ian Keyser, G3R00, Rosemount, Church Whitfield, Dover, Kent.

Well, it's happened again! time to get the copy off to George and only one letter to comment on, no doubt that in the morning the postman will arrive with some more and I will have to re-write this!

I'll start with the letter; it is from Dave, GM4ELV and covers a lot of news. The first and very important news is that he is going to give us the story on the five band WAC, am looking forward to that Dave.

Some contest news from Dave shows that the G QRP Club is well in the running as in the ARRL 28MHz SSB contest GM4ELV 1st. GM. in the CQ Dx Phone test '82 we had 10 entrants out of 95 in the QRP section 1st G G3FQT (10) 1st. GM GM4ELV (15). N8CQA (19) KA1CZF (22) W9NE (25) EA2SN (29) OE1SBA (32) 1st OK OK2BMA (2) KA9NLY (9) the figures in brackets are the overall positions.

Another point brought up by Dave is can the HW8 be modded for DSB? - anyone with thoughts on this matter please let me or Dave know as it would be very interesting to do it. That leads on to the bad news in Dave's letter, that is that he is getting over the after effects of a stroke and is having troubles with right arm and eyes. Is there anyone in the Glasgow area that can peak up his HW8 and perhaps fit IRT (Colin holds Data Sheet on that one) if there is please contact Dave, 1 Dunphail Road, Brucefield Park, Glasgow.

Ref. 21.285/385 SSB calling frequency. Regret we cannot give any firm news on this one yet. The situation at present is that the G QRP Club will propose that the frequency be changed to 21.385, but this cannot be done yet as Jack Swiney, the WQF President, is unable to handle any WQF activities for the present due to domestic problems. Will keep you posted on developments.

I have been very active on 15 and 10 CW and SSB but only worked other QRP stations on CW. I've even had taped CQ's going out on the SSB frequencies without response so think that as the winter draws on I will forsake the HF bands and come down onto the LF bands. I am also equipped with 2m gear now, so if anyone wants a sked, drop me a line. That's it for now.

73's Ian.

WQF News

Sad news for the WQF and the VK CW QRP Club. Jack Swiney, VK6JS, who was organiser of the VK Club and current Secretary of the World QRP Federation has had to resign from both due to the excessive pressures of his work. The WQF post is currently being sorted out but at present it appears that the VK Club may cease to function. Jack has worked very hard for both and QRPers worldwide are grateful for his considerable labours.

Have You Contributed to SPRAT ?

You do not have to be an author or a draughtsman. All we require is a circuit sketch and some rough notes. Please ensure all the values are stated on the circuit and sometimes sources of some components can be helpful. Sprat is an exchange of ideas amongst like minded radio amateurs which depends upon member contributions. So let us know what you are building, however simple or complex.

FOR SALE: Heathkit DX40U TX, plus VF1U VFO, also RA1 Receiver. Buyers collect. Price and details: SAE to A.W.McNeill, G3FCK, 40 Turnpike Rd, Newbury, Berks.

STOP PRESS

G4BUE is now using a G5RV at 30 feet on all bands. His tower & beam came down in a storm during the CQ CW contest & is a write off.

Contest News

THE AGCW-DL WINTER AND SUMMER QRP CONTESTS 1984

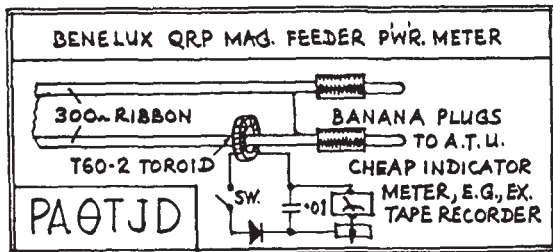
These very popular QRP contests are being held again in 1984, The Winter Contest on 21/22 January and the Summer Contest on 21/22 July 1984. Start and finish is at 1500 GMT with only 15 hours operating permitted on all bands 1.8 - 28MHz. Classes as follows:- A - single operator below 3.5 watts DC input; B - single operator below 10 watts; C - multi-operator below 10 watts; D - QRO stations over 10 watts; E - SWLs. Exchange RST/QSO number/input, i.e. 569/014/5w, adding X if crystal controlled. Either crystal controlled or VFO on each band but not both, crystal controlled stations not to use more than 3 crystals on any one band. Stations can be worked once on each band. Scoring is 1 point for QSO with your own country, 2 with your own continent and 3 for DX contacts. Multiplier is 1 for each DXCC country and 1 for each DX QSO. Band result is QSO points x multiplier, and total result is the sum of the band results. For crystal controlled stations, the points are doubled. Certificates for first three stations in each class. Separate logs for each band to be sent to Siegfried Hari, DK9FN, Spessartstrasse 80, D-6453 Seligenstadt, West Germany to reach him not later than six weeks after the contest.

THE 1984 G.MARCONI QRP PHONE CONTEST

The above contest is being held from 0001 4.2.84 to 2400GMT on 5.2.84 on 3.5 - 28MHz SSB with a maximum power of 10 watts PEP output. Single operator with either single or multiband classes and exchange RS only. Each DXCC country counts once only for multiplier credit regardless of how many times it is worked on each band. QSO points are 1 for QSOs with your own country, 2 for your own continent and 5 for any others (DX contacts). The antenna multiplier is double QSO points if a non directive antenna is used, and the power multiplier is 3 if your output power is less than 1 watt PEP, 2 if your power is between 1 and 4 watts, and 1 if your power is between 4 and 10 watts PEP. Your score is arrived at by QSO points x DXCC multiplier x power bonus. Usual log information and summary sheet to show details of scoring and equipment used to be mailed to Massimo Capozza I00AY, Via Sierra Nevada 99, 00144 Roma, Italy, within 30 days of the contest. Electronic kits will be awarded to the first three positions in the general results.

AGCW-DL HAPPY NEW YEAR CONTEST - 1984

The above contest will be held from 0900 to 1200 GMT on 1st January 1984 (and each successive years) on CW only on 3.5, 7 and 14MHz only. Class I is not exceeding 500 watts input (!!!), Class II is 100 watts, Class III 10 watts and Class IV for SWL. Exchange RST plus serial number plus AGCW membership number if applicable. Count 1 point per QSO but only QSOs with European countries count. Multiplier is the number of AGCW members worked and the final score is the multiplier X QSO points. Logs containing usual info to be sent by 31st January to Werner Hennig, DF5DD, Mastholter Strabe 16, D-4780 Lippstadt, West Germany. Special award to first three places in each class.



Ever wanted to check relative power in a ribbon feeder, or open wire feeder system? PA0TJD has one useful tip:

Using a normal RF ammeter the lowest power to get a possible reading was found to be about 50 watts. To allow a smaller power to give a useful reading, the circuit alongside was tried.

With this circuit, about 500mW will give a useful indication. (Using two rings, one on each line, will give a good idea of antenna feeder current balance.

Alamosa, The Paddocks, Upper Beeding,
Steyning, West Sussex.



Although I have only been back home from my U.S. trip for five weeks now, it seems a long time ago since I was sitting in 88 degrees talking to y'all about QRP. The memories and friendships that were made will go on for ever. For the next few issues I intend using some of the photographs I took in Texas instead of the usual one. This one shows (left to right) Dave Farris, K5NT; George, G3RJV; Fred Bonavita, W5QJM; me; Ed Popp, K5BOT, just prior to visiting The Austin Radio Club.

The Two Georges (RJV and OXX), together with Jo and myself arrived in Houston where we were met by Leo, KC5EV and his lovely wife Sharon. We stayed with them from the Monday until the end of the week and took in some sightseeing around Houston

and Galveston whilst preparing for the Convention. At the Convention we had the pleasure of meeting W0RSP, W7ZOI, K5NT, W6SKQ, K4AHK, W1FMR, W5LXS, W5QJM, N5EM, N5BA members of the Club, together with K4KJP who I have QSO'd many times. The QRP Forum went down very well with all the presentations being put on video, which in time will be available for Club talks in The U.K.

During the QRP Forum, Bob Spidell, W6SKQ was presented with his QRPP DXCC Trophy by Ade Weiss, W0RSP, the donor, and then it was Ade's turn to be presented with his by Bill Harding, K4AHK, Awards Manager of ARCL. I had the pleasure of meeting Gene, W400, who in December 1979 heard my 5mW input signal on 28MHz, for my furthest miles per watt distance. On the Friday evening we had a QRP Dinner at Angelo's Fishermans Wharf Restaurant, which was attended by about 35 QRPers. During this event, George G3RJV presented Wes Hayward, W7ZOI with an engraved hip flask (for his back-packing in the mountains!) from The G-QRP-C in recognition of his contribution to QRP through his "Solid State Design for the Radio Amateur" or the QRPers Bible. Your scribe, together with the other speakers at the Forum, G3RJV, GM3OXX, W0RSP and W7ZOI were then presented with Honorary Texas Citizen certificates signed by The Governor of Texas.

Throughout the Convention week-end a QRP Hospitality Suite was opened and this was the scene of much QRP chatter, QRPers coming face to face with each other for the first time, and much laughter and banter. The Convention came to an end on the Sunday and having said goodbye to George (OXX) I travelled west to Austin where I stayed the next few days with K5NT and his lovely family, Mary Lou, Amy and Jeff. There I was able to try out a 515 Argonaut that Fred, W5QJM had picked up for me in the flea market at a bargain price. I also operated with my little OXO rig from Dave's QTH and worked over 1,000 miles into W8 with it. The Tuesday saw us travelling to San Antonio with George and Jo and Fred, W5QJM with whom they were staying. After visiting Shilo's for lunch and The Alamo it was back to Austin where George and I gave a talk on QRP to The Austin Radio Club. The Wednesday was spent sightseeing around Austin and visiting ham shacks, and doing some operating. It is quite an experience to operate as G4BUE/W5, and when I called Club member KA1GPG, Jim with that call sign, while operating Fred's Argosy on 28MHz, he was quite taken aback! George operating as G3RJV/W5 worked Gordon, G3DNF on 28MHz, also from Fred's QTH.

Whilst in Austin we had a Mexican style QRP Dinner with W5QJM, K5NT, K5BOT and wives at which George, Jo and I were introduced to the art of drinking tequila!! Not the drink to accompany you through a QRP contest!! Thursday afternoon, and it was time to say good-bye to Austin and fly back to Houston, where Leo, KC5EV, Sharon, Wes W7ZOI and his wife Shon met me at the airport and said fairwells over a last steak. Nine hours later saw me arriving in a wet, windy and very stormy Gatwick Airport, and I knew I was home. After boring my wife Pam and boys, Steve and Gary, with all the details of the trip, we have decided to skip a holiday in 1984 and all go to the U.S.

for a holiday in 1985 for as long as I can get time off work. I would like to see a little more of the country, but of course visit Texas again. The hospitality which was shown to me by everyone I met has to be experienced to be believed, and it goes to prove that QRPers are the best friends a guy can have. Thanks especially to Sharon and Leo, and Mary Lou and Dave, my hosts for making me feel so much at home. Sharon and Leo are thinking very seriously of visiting The U.K. to coincide with The HF Convention in Birmingham next year.

Whilst on the American scene, The Fall QSO Party of The ARCI seems to have had some good conditions, at least on the Atlantic path. Everyone commented it was like a Houston Convention reunion on the air with everyone working each other. W7ZOI and W6SKQ both commented on the bad conditions over on the West Coast. The Club September Activity Week-end had mixed results. Brice, W9PNE worked 4U1ITU on 21MHz, whilst GM30XX after working several VKs spent 2½ hours calling VK7VV. At one point OK2BMA, GM4HBG were also calling Rai but ON5AG is believed to be the only European Club member who worked him. Rai has worked 189 DXCC and has a very loud QRP signal. CW8PG arrived at his /P QTH to find some kind b.... had let one end of his antenna down, and as it was pouring with rain, Gus was not amused. He heard W9PNE on 14MHz but couldn't raise Brice. KH6CP/3 reports working G4EBO, HOM, KLQ and EA8EY, and also 4U1ITU on 7MHz - nice one Zack. A reminder of The Club Spring CW Activity Week-end over 17/18 March 1984 and also The AGCW Winter QRP Test over 21/22 January.

Now for some bad news. The VK CW QRP Club folded as from 17 October. This was very sad when I heard about it. I hope sometime in the future sufficient interest results in the Club being reformed. PAØGG reports that The Benelux QRP Club is growing slowly and the Club have a net on 7030 from 1100-1200 Sundays. Back to the ARCI, K5BOT tells me that as from 1st January 1984 the monthly informal QRP Parties will be started again on the first Sunday of each month from 1500 to 2400 GMT on the QRP frequencies, including 10106 and 10120. They are not a contest, just intended to create activity both on CW and SSB, and will be an excellent opportunity for two-way QRP contacts between Europe and North America.

G4LV has built the transmit part of The Force 3 rig in the last Sprat, using a BC107A CO and 2SC2078 PA and gets 5 watts out, GM30XX is building a brand new TCVR, and GM3MXN has modded his HW8 for 18MHz with best QSO to date with VP8ANT. John, F6FZL would like to hear from HW8 owners with details of output power obtained, and Bill, G4KKI is back QRV with a HW7 and indoor dipole, with which he has worked W4. G3XBM is QRV with a Icom 202 and homebrew transverter to 28MHz, which has netted LU, PY and W5 with 1W PEP to a dipole at 12 feet. Roger uses a SL6440 in the transverter (details for Sprat please Roger). G4ETJ is also back QRV from his new QTH in Dorset and Bob, G3IQF mentions working 7 USA QRP stations in the ARCI Week-end, the most he has worked in one day. G3YCC took his 515 on holiday to Inverness and met GM4GNB and G4NBI took his SCD on holiday to Cyprus with him. I built the STX on a very small PCB, and after working W4, I complained to George (OXX) that it drifted on 21MHz. He said it was not designed for that band but suggested using a better bias circuit and an emitter resistor with decoupling capacitor, should anyone else have a similar problem.

KX6CO has worked VK7VV on two occasions, and also OH, LZ and UB5 on 21MHz. W2JEK sent a QSL card for a CW QSO he had had with Ian, G3R00 (nice to know you are getting out on the mode Ian, hi), Don is up to 80 DXCC and is building the FOX. NSCQA has been issued with QRPp DXCC Trophy No. 49 - congratulations Buck, and Zack, SP5AJU has now got his OXO and licence back from the Authorities and is active on 14060.

G5DEH is now WA2LZZ/7 from Montana after failing to persuade The USAF to let him stay for another year, and Rich G5CSU is due to leave the U.K. in April for the same reason. G5CRD is now the editor of the Newsletter of The BARTG. Marvin would be pleased to hear from any members interested in RTTY. A later letter from G3YCC says he has also built the STX, and his DXCC is now at 96. G3BGR mentions the French stations calling "CQ TEST" on 10MHz.

Just room to say thanks for all your letters and news. A very Happy Christmas to you all and a peaceful 1984. Talking of which I strongly urge you to make your plans for 28/29 April and The NEC now. I look forward to meeting as many members as possible. Let me know how your Winter goes (by 20 February please) and CU on 060.

Best 73 and QRP DXing,

Chris

The G QRP Club CIRCUIT HANDBOOK

The G QRP CLUB CIRCUIT HANDBOOK has now been reprinted by the R.S.G.B. The reprinted book has been beautifully produced with much clearer text (reset by G3LSL) in a stronger binding. On behalf of the club I wish to thank the RSGB for refunding and reprinting the book. The club does not hold stocks of the book, all distribution is via the RSGB. Check the RSGB Mail Order forms in the current issue of Rad. Com. The book is available for £3.77 including postage (4.19 for non RSGB members) from RSGB Publications (Sales), Alma House, Cranborne Road, Potters Bar, Herts EN6 3JW.

IN THE U.S.A. The RSGB is to make the book available via the ARRL in the same way as other RSGB books are available. I would advise overseas members in other countries who have stockists for RSGB books to check them first before ordering from the RSGB.

G QRP Club Printed Circuit Boards

The following etched Printed Circuit Boards, complete with circuitry and layout, are still available:

THE S.C.D. TRANSMITTER BOARD £1.00

A simple beginners transmitter by G3RJV from Short Wave Magazine, can be used on 80/40/20M.

THE STX TRANSMITTER £0.75

About the simplest possible HF Transmitter! By GM3OXX featured in SPRAT 35.

THE FOXF MINI-TRANSCEIVER £0.85

The ultimate in 'fun rigs' an HF transceiver on a PCB 2"x2" another circuit from GM3OXX featured in SPRAT 35.

WARC CONVERTER £2.15

A receive converter for the 10/18/24 MHz bands by DJ1ZB. A single 4MHz crystal brings 10/18MHz onto 14MHz and 24MHz onto 29MHz. Uses standard Ambit components.

ORDER FROM: Mick Hodges, G4OPE, 51 Carnford Rd. Sheldon, Birmingham. B26 3AG.
Cheques to 'G QRP CLUB'. Postage charge of 20p on each board.

G QRP Club Tee Shirts & Sweat Shirts

Sweat Shirts (grey) with G QRP Club Badge in Black on left breast.

Adult sizes : £6.75 Childrens Sizes ; £5.50

Tee Shirts with large G QRP Club Badge in the centre of Chest.

Adult sizes ; £3.00 Childrens Sizes ; £2.65

Please state chest size when ordering, prices include postage + VAT

Ken Stockley, Amrad, The Chase, Chapel Road, Wisbech, Cambs. (0945) 581099.

HAPPY NEW YEAR

from us all at

Shoreham Copy Centre

3 John Street, Shoreham-by-Sea, W. Sussex Tel: 2633

The G QRP CLUB IN TEXAS

ARRL Convention Houston 1983

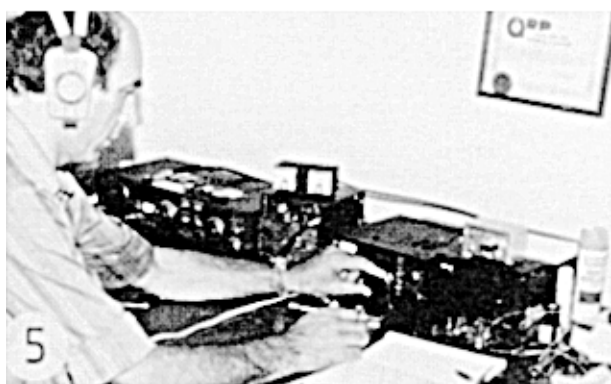
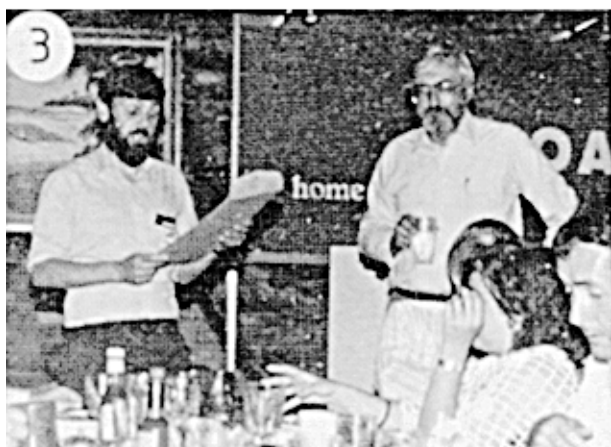


As early as 1981 plans were underway for the first QRP Forum to be staged at an ARRL National Convention. The site of the 1983 Convention was Houston in Texas and a committee headed by Leo Delaney, KC5EV, Fred Bonavita W5QJM and Ed Popp, K5BOT organised a major QRP Programme. The line up of speakers, which changed at the last moment was Wes Hayward, W7ZOI, Adrian Weiss, W0RSP, George Burt, GM3OXX, Chris Page, G4BUE and George Dobbs, G3RJV. W7ZOI is perhaps the best known of all technical writers on QRP matters, Wes has written extensively in QST and is joint author of the essential book for all QRP fans, Solid State Design for the Radio Amateur. W0RSP was the editor of Milliwatt, the sadly missed QRP Journal of the 1970's. Ade is now QRP Editor of the CQ Magazine and the originator and provider of the QRP DXCC Awards. GM3OXX is perhaps the best known QRP'er in the UK. George has written many articles for SPRAT, including our most popular fun rigs - OXO, Super OXO, STX and FOXX, and builds equipment that is an inspiration to all. G4BUE is a well known QRP DX'er and contributor to SPRAT. Chris has DXCC at 5 watts, DXCC at 1 watt and over 200 countries confirmed in QRP. He is also well known for his work in extremely low power communications and he first coined the phrase "Milliwatting".

On October 3rd, the three G QRP Club speakers arrived in Houston, with Mrs. G3RJV, to be met by Leo and Sharon Delaney. The first culture shock, 88°F and 90% humidity, was quickly superceded by the second, the amount of food that Texans expect mere Europeans to eat! The Delaney family were generous hosts for the week in spite of the odd habits of the Guests. GM3OXX went for 8 mile runs in the steaming heat, G4BUE wanted to chase DX in the shack and the G3RJV(s) insisted on going for long walks in urban Houston observed with suspicion by air conditioned locals behind their bolted windows. A highlight of the week was a visit to Galveston to take the waters of the Gulf of Mexico and leave a large G QRP Club badge engraved on the beach. The Texan image of the Staid British was torn to shreds by the usual G QRP Club ribaldry.

The Convention began, for the G QRP Club speakers, with a VIP trip around NASA, meeting, almost by chance, John Allaway, G3FKM, yet another club member. The Convention QRP events began on Friday October 7th with the opening of the QRP Hospitality Suite, a social meeting centre with a bar, for all interested amateurs and the forum speakers. In the evening a QRP Dinner, with enough seafood on each plate to fill the English Channel, was arranged in a local restaurant. During the meal the forum speakers were presented with certificates of Honourary Texas Citizenship by W5QJM, each certificate was signed by the Governor of Texas. Although very splendid, the certificates, sadly, were documents of good will rather than rights to any oil revenue or permits to park hire cars anywhere in the State! W7ZOI was presented with an engraved silver hip flask (for his mountaineering trips) by G3RJV with thanks from the G QRP Club for the pleasure his writings have given to home constructors.

The Saturday of the convention was sheer hard work! The G QRP Club party had to rise by 5 a.m. to be ready for the first lecture (G3RJV) at 9 a.m. and the programme of lectures continued until 3.30 p.m. The lunch break and afternoon periods alternated between fighting with big Texans for bargains in the outdoor



The QRP Forum will be held on Saturday, October 8, at the AstroVillage Hotel in Tower Room 4, beginning at 9 a.m. the following events are scheduled:

9:00-9:45 a.m.

Amateur Radio on a Shoestring

Rev. George Dobbs, G3RJV

9:45-10:30 a.m.

QRP Equipment in the Mountains

Wes Hayward, W7ZOI

10:30-11:15 a.m.

Millawatting Experiences in the U.K.

Chris Page, G4BUE

11:15-Noon

QRP Design and Construction Techniques

George Burt, GM3OXX

Noon-12:05 p.m.

Presentation of QRP DXCC Awards

LUNCH BREAK

1:00-1:45 p.m.

Single Hop Propagation to Great Distance and QRP

DXing

Adrian Weiss, WØRSP

1:45-2:30 p.m.

Simple Phase-Locked Loop Design

Wes Hayward, W7ZOI



Flea Market with temperatures in the upper 80's and retreating to the Hospitality Suite to drink ice cold Lone Star Beer (it's a little like cheap lager only less so!). The QRP Forum lectures were very well attended and the speakers warmly received.

Sunday, October 8th, was the final half day of the Convention and the G QRP Club party spent time catching up with the rest of the events. The traders section (surprising somewhat less than that at the RSGB event at the NEC), the Flea Market (rather like a UK Rally) and other specialist groups. G4BUE attended an FOC function and the G3RJV(s) had lunch with G3FKM. After lunch the rest of the party said farewell to GM30XX, who had to return home on the Monday, and drove to Austin, the State Capital.

The main QRP event in Austin was a talk by G3RJV and G4BUE at a combined meeting of two Austin Radio Clubs, being Texas the highlight of the evening was the meal. Texan hospitality made the visit a huge success. A visit to the Alamo in San Antonis confirmed how the English and the Scots won Texas from the Mexicans and gave it to the Texans.

After the radio club talk the Dobbs' left in a hire car for a further tour of the west of Texas, followed by a visit to New Orleans and a further week in Houston through the kindness of Glen Reid, K5HGB and his wife Gale.

The whole venture not only proved to be a great pleasure for the UK party but helped to forge closer links between QRPers on both sides of the Atlantic. Roughly half of the amateur population of Texas has been invited back to the UK so club members are warned to be ready with British amateur radio hospitality. The first known return visit will be by Leo, KC5EV, and Sharon for the RSGB Exhibition in April, 1984.

The four club representatives wish to thank the organisers and the participating radio amateurs for their extreme kindness and friendliness throughout the visit.

Key to Photographs

- 1) The Astro Village Hotel, the main building on the Convention site. Nearby are the Astrodome huge baseball hall and the Astroworld amusement park.
- 2) George Burt, GM30XX, lectures on QRP Design and Construction Techniques.
- 3) George Dobbs, G3RJV, speaks at the QRP Dinner at Angelo's Fisherman's Wharf Restaurant on the evening before the QRP Forum. Fred Bonavita, W5QJM, looks on, with Leo, KC5EV in the bottom right.
- 4) Chris Page, G4BUE, lectures on Milliwattting Experiences in the UK.
- 5) Chris, G4BUE, operating as G4BUE/W5 at the QTH of Leo Delaney, KC5EV.
- 6) Wes Hayward, W7ZOI, lectures on Simple Phase Lock Loop Design.
- 7) Ade Weiss, W0RSP, pictured with a delighted young lady....believed to be a "friend and former student" ↓
- 8) The Texas Emergency Amateur Communications van in front of the main hall with Chris, G4BUE, chatting to Sharon Delaney, our hostess in Houston.
- 9) Big Texans looking for big bargains in the "tail gating" section of the large Flea Market at the back of the Astro Village Hotel.