

# SPRAT

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

ISSUE NR. 27 © G-QRP CLUB Summer 1981



Walt Legan KA4KXX

## Contents:

- 20-2m Transmit Converter
- Broadband Linear PA
- The JU6 Plus
- 160m Vmos 'Kite' TX
- Universal Sidetone
- 3w PA & C/O for SCD
- 80m Receiver
- Members News
- New QRP ARCI Awards
- WQF - QRP World News

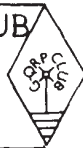
The simple, but fine, QRP Station of KA4KXX. On top of the Heath Receiver are: left - Stabilised P.S.U., right - 15 metre Transmitter based on the Goober Whistle circuit. See Walt's article on page 3.

SPRAT: The journal of the G-QRP-CLUB

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Rev. George Dobbs [G3RJV]  
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Birmingham. B37 7QX [021-770-5918]

Dear Member,

This issue brings the completion of two fine articles from the last SPRAT; a linear amp for the G3R00 Tunbridge Transceiver and the transmit converter of the G4DHF 14Mhz to 144MHz Transverter.

Since the last issue I have have the pleasure of visits from George, GM30XX, Colin, G3VTT, and Rich, G5CSU and met several members at Rallies. On July 19th at the Brighton Rally, I hope to be present with G3VTT and G4BUE and we would be pleased to meet any other members. The venue for the Leicester Exhibition in November looks as if it will be the Donnington Park Race Circuit. I hope to be able to book a room at a local pub so that members present on the last day can meet after the close, more details in the next SPRAT.

I am hoping to gather a number of photographic slides suitable for a club talk. At present I have a file of back-up material for such talks which can be used by any member. The intention is to build up a collection of slides of QRP stations, pieces of homebrew equipment and any photographs which would be useful in such a talk. If you have such slides or have to means of preparing them, I would be pleased to hear from you. If required, the club would meet extra expense involved in sending a slide for the club collection.

73 fer nw hpe cu qrp... G3RJV *George*

SUBSCRIPTION RENEWALS

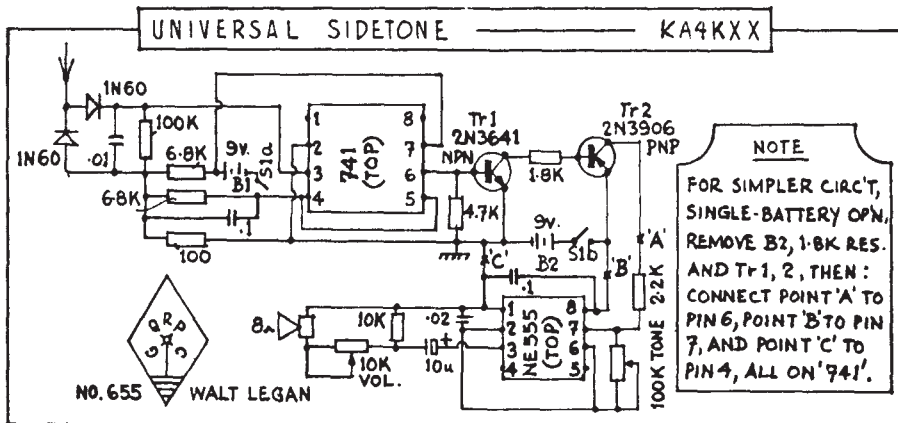
Renewal (rates now £3.50 or \$9 US) to Alan Lake, G4DVW, 7 Middleton Close, Nuthall, Nottingham, NG16 1BX. PLEASE QUOTE YOUR MEMBERSHIP NUMBER. Cheques made out to "G-QRP-CLUB". European members may use Giro Cheques. A reminder is automatically stamped onto Sprat for the series of numbers due between each issue. IF YOU HAVE ALREADY PAID PLEASE IGNORE THE STAMP.

THE G-QRP-CLUB QSL CARD

A distinctive Club card, white with blue information and the members call and details in red, is available to members. The card has a novel "Circuit Puzzle" and Club information on the reverse side. Details and an order form can be obtained from the Club Treasurer, Alan Lake, G4DVW.

NEW CLUB MEMBERSHIP CERTIFICATES

Quite a lot of members have enquired about Club badges, certificates and rubber stamps. We are investigating all of these. As a beginning, we are issuing every member with a membership certificate. I have signed the certificate enclosed with your Sprat, please add your own personal details. It was quite a job signing over 1000, so the rest of the pen work has been left to you.



Here is a sensitive, portable, sidetone oscillator that can drive headphones or any speaker without a hard-wired connection to the transmitter. It requires no tuning for any HF band, and can be switched easily from transmitter to transmitter, so you can avoid having to include a sidetone in every transmitter you build. The tone is pleasant and free of thumps or clicks.

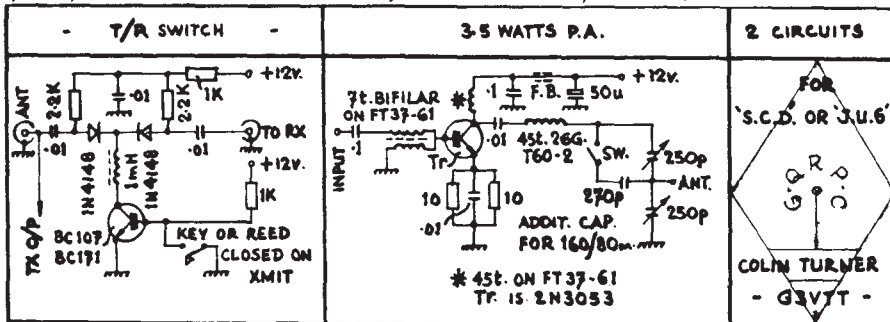
The circuit begins with your basic untuned voltage doubler RF rectifier. The induced voltage drives a EC op amplifier (see G4DYF, Sprat 20 and G4EEM, Sprat 21), which turns on the transistors to power the NE555 oscillator (similar to ARRL Electronics Data Book, page 114).

For an antenna I use a thirty inch length of wire which goes through a small hole in the bottom of my one watt transmitter chassis. Inside, the end of the wire is wrapped one time around the inner conductor of my 50 ohm coax, where it is exposed at the antenna jack connection.

With anything over a watt, a few turns of antenna wire around the shielded coax outside the transmitter should be sufficient.

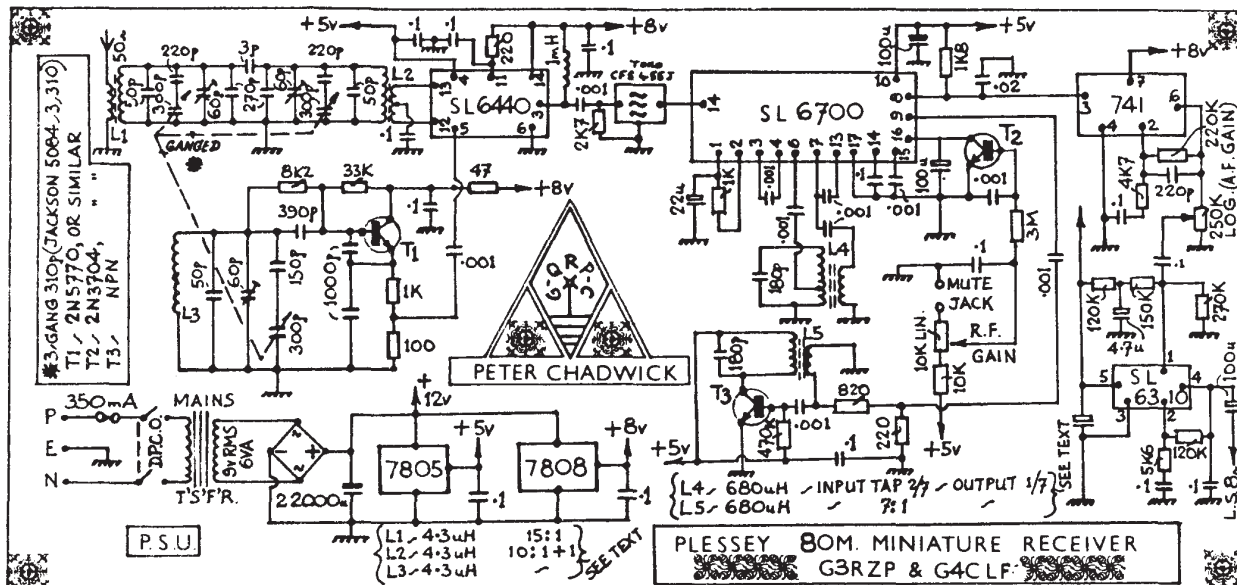
Actually I have a home made single FET dipmeter that will trigger the sidetone loud and clear with as much as two inches separating the dip coil and sidetone antenna, so I know even the milliwatt boys can use it!

For a simpler circuit with single battery operation, remove B2, the 1.8K resistor, and the transistors. Connect point A to pin 6, point B to pin 7, and point C to pin 4, all on the 741. Sensitivity will be reduced, however.



Colin has been experimenting with the SCD transmitter (Short Wave Magazine Jan. 1980 - available from G3ROO as a data sheet). The above circuits represent a higher powered PA stage and a suitable T/R switch. Although untried, both circuits could well be used with the G3DOP JU6 circuit.

**STOP PRESS NEWS....**Ten Tec have ceased production of the Argonaut. Radio Shack of London are receiving their last shipment of the Model 515 this month, after which only spares will be available for this and other Ten Tec Argonaut models. Radio Shack: 01-624-7174.



We are grateful to Peter, G3RZP, for a preview of a new Plessey 3.5MHz receiver prototype which he developed with G4CLF. The circuit in its final form will appear in QST at a later date. This preview might help members with an introduction to the newer Plessey communications I.C.s

T1	2N5770 or similar	VHF	NPN
T2 T3	2N3704 or similar	NPN	
L1	4.3 uH	15:1	
L2	4.3 uH	10:1 + 1	(NOTE: Original used extra transformer to obtain correct ratio).
L3	4.3 uH		
L4	680 uH	Input tap 2/7	output tap 1/7

Performance details are:-

Sensitivity : 12dB S+N/N for 1uV EMF input.

L5 680 uH 7:1

TOKO numbers of coils in the original :-

L1 L2 L3	KALS 4520A	integral 50p in L1 L2, removed and replaced by silver mica in L3
L4 L5	YHCS 11100	AC2

Tuning Capacitor Three gang 310pF (Jackson 5084/3/310)

Capacitors AL Electrolytic > 1u

Ceramic < 1u

Silver mica in L.O. only

Capacitors under 1000pF maybe polystyrene, but if used in L.O. stability may suffer.

I.M.D. : 3rd order intercept point +8dBm.

Reciprocal Mixing : >90dB at 10KHz separation for 3dB signal + noise ratio degradation of a 1uV EMF input

## VHF Section - 20 to 2m. Transmit Converter David Johnson G4DHF

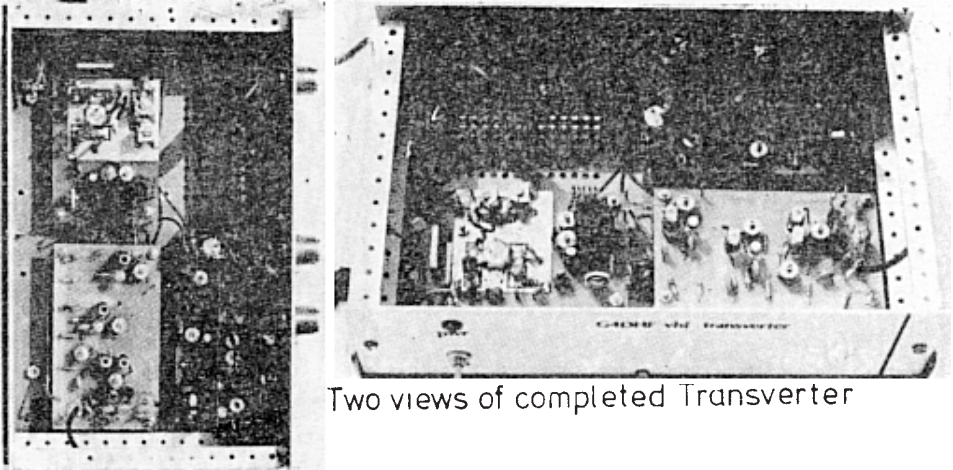
Continuing from the receiver converter described in the last issue of Sprat, the transmit converter transverts 14MHz SSB/CW signals to 144MHz by mixing with the 130MHz L.O. source provided by the RX system.

The low power mixer is based on a modified version of the DL6HA transverter (VHF Communications, August 1970) but incorporate FET's in the push/pull mixer. The 14MHz signal is coupled into the system by a low impedance winding over the coil, L2, which is padded on 14MHz by capacitors C1 and C2, and resonated by slug adjustment. This signal, together with the injected 130MHz is fed out of phase to the gates of the push/pull mixer; the resultant 144MHz signal being resonated in L3 by C5. This is loosely coupled into coil L4 and then into a two stage class A amplifier chain which produces some 15-20mW output. This may seem a very low value, but if bi-polar transistors were to be used in the mixer, then the output would be considerably increased. So too will the harmonic content. Remember, the difference between the two major mixing products (144/116MHz) is only 28MHz when using a 14MHz IF, as opposed to the 56MHz, when using the more conventional 28MHz IF. Even so, a two turn link winding over L6 will provide reliable contacts over several miles.

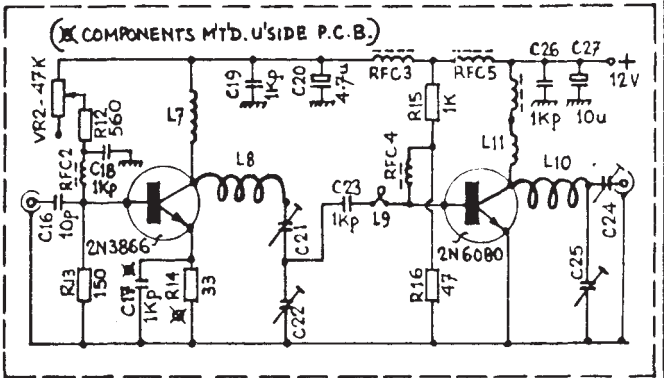
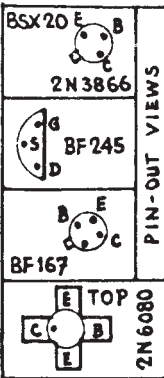
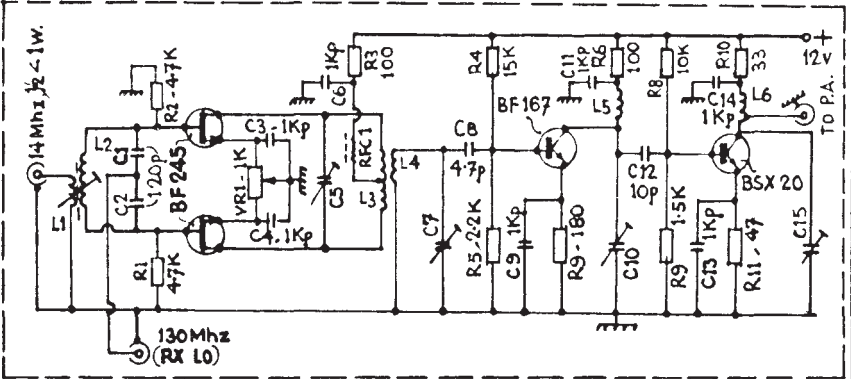
The transistors in the PA section have approximately 10db and 12db gain respectively. The driver (2N3866) is fitted with a large clip-on heat sink as under normal working conditions, operates at several degrees centigrade! The RFC's in the base circuits provide good RF isolation from the bias supply, thus maximizing those vital milliwatts. The output transistor (2N6080) is a strip-line device and produces a good 2 watts at the output.

Construction - Both PCB's, up to the final transistor utilize single sided copper board. It was decided in the prototype to etch the top board around the driver transistor to keep the emitter lead as short as possible, and to reduce detuning of the components. However, there is no real reason why this board cannot continue a full earth plane, provided of course, that components are adequately insulated where necessary. Note that R14 and C16 are mounted underneath, and soldered directly to the PCB in order to keep the leads as short as possible. Although not included in the prototype, small metal screens between each stage will assist in the harmonic suppression of the system. On the PA board, the final transistor is bolted to a piece of angled brass used as a heat-sink before the tabs are soldered into circuit. No excessive heat is dissipated as the device is running well within its potential of 4 watts RF output.

Alignment - Set VR1 in mid position, the slug in L2 half inserted, and C5 closed approximately 5%. Approximately 3 volts of 130MHz, as supplied by the RX L.O. and  $\frac{1}{2}$  watt of 14MHz is applied to the ports, and L3 resonated on 144MHz by C5. The amplifier chain is tuned for maximum output. The 116MHz mixing product is detected on a wavemeter or second receiver and VR1 adjusted for minimum signal. Adjust the 14MHz coil for resonance and linearity of mixing as indicated by the quality of the 2 metre signal. On the PA board, VR2 is adjusted so that 1 to 1.5 volts appear above the emitter resistor R14. With the given values of the bias network, the PA should draw a standing current of between 10 - 20mA.

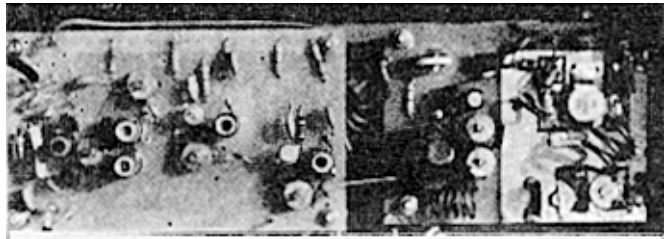


Two views of completed Transverter



L1	3 t	30G	OVER CENTRE OF L2
L2	20 t	"	3/16" S.W. SLUG
L3	6 t	20G	(C.T.)
L4	4 t	"	"
L5	4 t	"	"
L6	4 t	"	"
L7	5 t	22G	"
L8	4 t	20G	B.I.D.
L9	1 t	"	6 I.D.
L10	3 t	16G	10 I.D.
L11			ALL SAME AS L7

R.F.C.'S 1,2,3,4 & 5 = 5 turns ON AN FX 1115 FERRITE BEAD (30 S.W.G.)  
 R.F.C. 6 = 2t ON FX1115 BEAD (30G)  
 C5,7,10,15,21,22 = 2 < 20p MINIATURE SEMI-AIR SPACE D. C24,25 = 3 < 30p AIR. ALL OTHERS: MINI. PLATE CERAMIC, EXCL. C20,27 WHICH ARE TANTALUM



TOP OF CONVERTER AND P.A. BOARDS



# G3ZQA 'KITE' TX

## SWITCHING

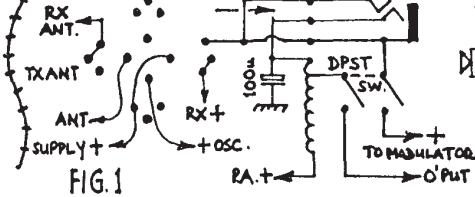
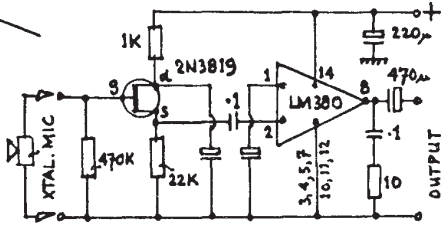


FIG.1



MODULATOR FIG.2

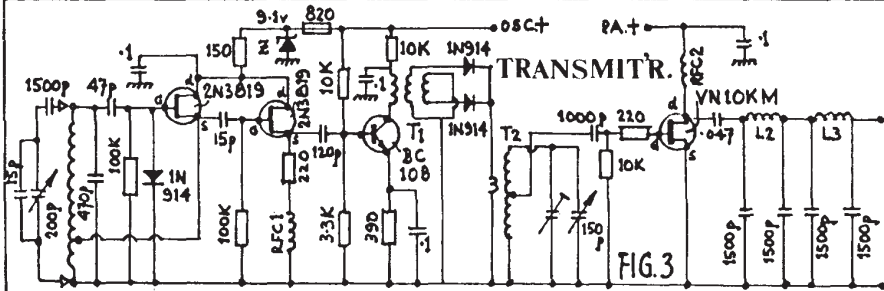
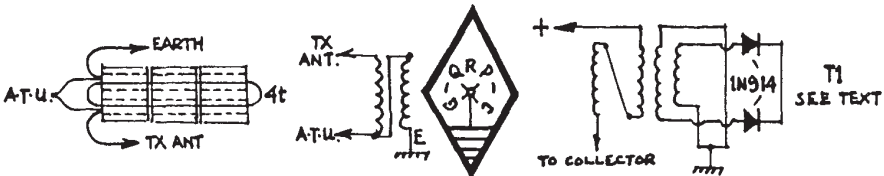


FIG.3



MATCHING DEVICE

ROY ROWNTREE  
G3ZQA  
G-QRPC/NO.170

TRANSFORMER

FIG.4

FIG.5

### Coil Data

- L1 - 90 turns, tapped at 15 from earth end on T68-2 toroid with 30SWG enam. wire.
- L2 and L3 - 27 turns of 22SWG enam. wire on a T68-2 toroid.
- RFC1 - 1mH
- RFC2 - 8 turns of 28SWG enam. wire on small ferrite bead.
- T1 - 15 turns of 4 twisted wires of 30SWG enam. wire on FT37-61 ferrite toroid, (See Fig. 5)
- T2 - 60 turns, centre tapped, with 28SWG enam. wire on T68-2 toroid. Link 5 turns spaced round toroid of 22SWG plastic covered wire.

SALE OR EXCHANGE FOR RELIABLE H.F. GEAR (W.H.Y.?) 4 meter Pye Cambridge A.M. Radiotelephone xtal for 70.26, 70.365 & 70.4 MHz.  
2 metre Sorno Viscount F.M. Radiotelephone xtal for simplex on 145.0, 145.5, 145.55 and repeaters 145.125 and 145.175 MHz.  
Offers to G3FCK, QTHR, Newbury 42400 (EXT.373) weekdays, or Newbury 40750 evenings and weekends.

On 20SSB? Try 14.333 1730z Daily



## The G3ZQA KITE TX      160m Vmos Transmitter

The prototype transmitter gives good audio quality, clean click free keying with no chirp, free from pulling and with good stability. The single switch control (See Fig. 1) switches the positive supply to the receiver in the centre position, to the receiver and oscillator section on net and to the PA and oscillator sections on transmit. It also switches the aerial to receiver or transmitter. The fourth pole on the switch is not used at present, but will be used to mute the receiver when a more suitable one is finished. A double pole single throw toggle switch takes the modulator out of circuit on CW when the modulation transformer together with the 100 $\mu$ F capacitor then form an effective key shaping network.

The oscillator runs at 0.9 to 1 M/h over about 160 degrees of the air spaced tuning capacitor using one section of a two gang variable with an internal slow motion drive salvaged from a transistor broadcast receiver. The toroid coil is mounted upright on the veroboard and held with a blob of Evostick.

The trimmer in the doubler circuit is fastened to the veroboard by the central mounting screw and the toroid coil mounted flat on top of it, the wire used being thick enough to hold it reasonably firm when the ends are soldered to the trimmer lugs, which I bent upright. The trimmer is adjusted through the centre of the toroid so that the 150pF variable (Jackson 804 type) in parallel with it tunes the full band.

The PA likes to work into a load of 50-100 ohms. A lower load than this draws an excessive PA current which should be limited to about 100-150 mA at 12 volts input.

The transmitter AE terminal is connected to the kite aerial via a two gang variable capacitor with both sections in parallel to give about 1000pF. To set up the transmitter this series capacitor is about threequarters closed and the kite raised to about 100 feet. Under these conditions the PA draws about 20mA. The kite is then raised until there is a peak in the PA current (around 120mA) with a certain length of line (around 140 feet), the current falling off when the kite is either raised or lowered. The kite reel can then be pegged into the ground and the aerial/counterpoise system brought to resonance anywhere in the band with the series capacitor.

The earth terminal on the transmitter is connected to a wire about 100 feet long stretched along the ground. I do not connect any part of the equipment to the ground as I found it made no noticeable difference.

The aerial and counterpoise wires are of the same type which was obtained from Eley Electronics, 112 Groby Road, Glenfield, Leicester. I use wooden fishing reels to hold the two wires, making connections to the wires with crocodile clips.

When the transmitter is used at the home station aerial system, which has an input resistance of about 25 ohms at resonance at the middle of the band, a simple matching device is necessary between the aerial/earth system and the transmitter to prevent a high load to the transmitter and thus reduce the PA current to a safe level (see Fig. 4). Three small ferrite blocks, about 1/2 inch square and 1/4 inch thick, with two holes through, were salvaged from a discarded TV set. Two lengths of 30SWG enamelled wire are twisted together about 10 twists per each and the twisted wire threaded through the holes to form 4 turns. The end of one wire is connected to the start of the other and this tapping goes to the aerial tuner, one end going to earth and the other to the transmitter AE.

The modulation transformer is wound on a small valve type output transformer that has windings on a bobbin with a central core about 1/2 inch square (1/4 square inch) and about 1 1/2 x 1 inches overall. Remove the laminations from the bobbin and remove all the original windings. Then wind on eight layers of 28SWG enamelled wire with a tapping at six layers (i.e. 6 plus 2 layers). Replace the laminations all one way to form butt joints, not interleaved. Alternatively a small output transformer with 3 or 4 ohm and 16 ohm windings on the secondary can be used, correcting the low impedance tapping to the modulator output via the switch and the 16 ohm tapping to the PA, leaving the primary unconnected.

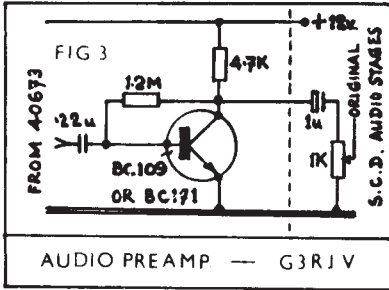
(Editor's Note: A copy of Roy's veroboard layout is available as a data sheet from G3ROO for a large SAE. In the next issue of Sprat, we will feature Roy's 160 metres main station Vmos PA transmitter.)

FOR SALE: Mizuho QP21, 21MHz one watt TX with VFO-7 as reviewed in Winter 79/80 SPRAT. Built in box and aligned by Lowes. Cost £29, accept £16.  
Andy Nelson, GM4IIR, Chapland Cottages, Bellefield Rd. Lanark. Scotland. ML11 7RH



# winning SPRAT article by G3DOP

The original JU6 Transceiver by John McDonnell, G3DOP, appeared a a half page SPRAT article in SPRAT 20. Since that time it has been built by many club members with various modifications and additions. The Article won the G2NJ Trophy for the most popular SPRAT article in the period 1978-80. This two page spread re-introduces the JU6 with some of the modifications used by members.

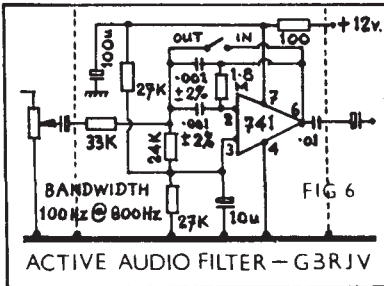
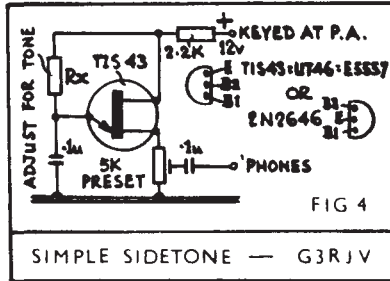


## AUDIO PREAMPLIFIER (G3RJV)

Originally from the S.C.D. this pre amp can be a great help if placed between the 4073 mixer and the AF gain control. It can be mounted on the back of the 1K audio gain pot.

## SIMPLE SIDETONE (G3RJV)

Suggested in SPRAT 21, this simple single UJ circuit with output fed directly to the phones socket. Ideal for avoiding "deaf keying". It is also useful to incorporate switching in the T/R circuit to switch the AF amp off during transmit to stop loud thumps



## ACTIVE AUDIO FILTER (G3RJV)

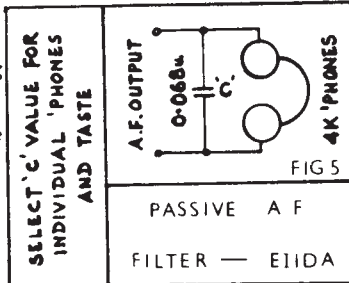
Basic one stage op amp filter, with this filter in circuit, the AF pre amp lifier will be required.

## CRYSTALS SUITABLE FOR THE JU6

are available in the QRP calling channels 7030,14060,21060 from P.R. Gollidge Electronics, Merriott, Bomserset. at the special club price of £3.00 inc.

## PASSIVE A.F. FILTER (EI1DA)

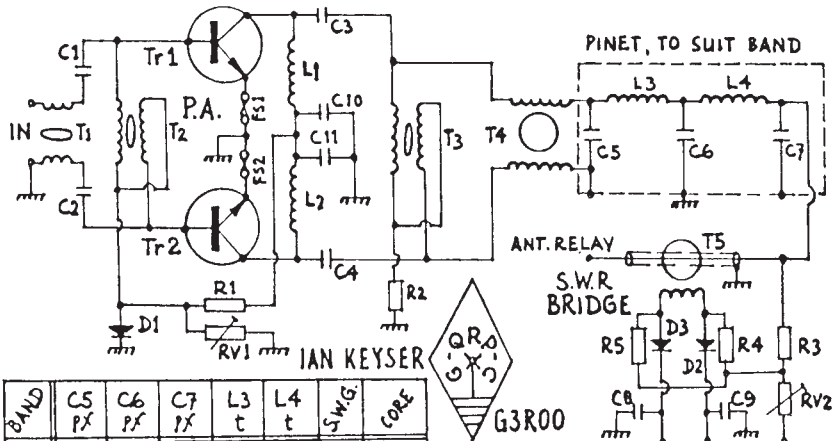
Hal's beautifully simple idea is merely a capacitor across the winding of a HiZ pair of phones to tune the windings. 'C' is adjusted to give an AF peak with individual phone sets. Hal also runs a VFO directly into the JU6 first TX stage for variable frequency operation.



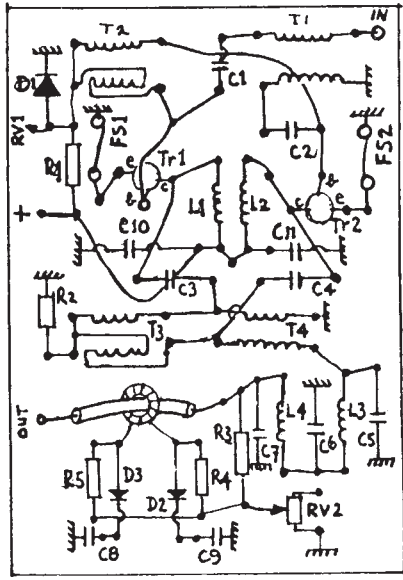
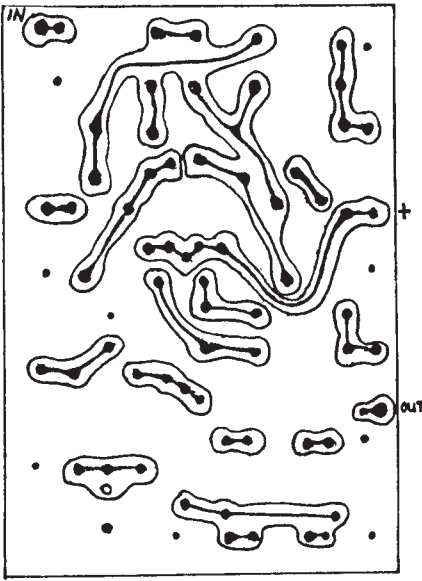
WHAT DOES JU6 MEAN? - A JUnk box transceiver with 6 active devices.....

# Class A Power Amplifier suitable for The Tunbridge Ian Keyser.G3R00

## CLASS 'A' BROADBAND POWER AMPLIFIER



BAND	C5 pF	C6 pF	C7 pF	L3 t	L4 t	SWG.	CORE
80		750		21	22	T-50-2	
40		470		14	"	"	
20		210		12	"	T-50-6	
15		105		9	"	"	



COMPONENT  
FOIL

P.A. P.C.B.

A few points for the novice builder of 'power' amplifiers. There is very little setting up of the PCB, but a few points should be observed prior to applying the power. Firstly, the bias preset should be set at maximum resistance, and the positive supply current monitored by a multimeter set to its 100mA range. When applying the power for the first time, observe the meter. If there is a rapid increase in current when switched on, SWITCH OFF! Either the bias pot is set the wrong way and the transistors are 'hard on', or there is a short on the PCB. If all is well, there should be a standing current in the region of 10-20mA. Adjust the bias pot for a standing current of 30mA, and watch the meter for a minute or two. This current should remain stable, and not slowly rise. If it does rise, apply more heat sinking, as it is insufficient. Now increase the standing current to 75mA and observe the meter. Be ready to turn off, as the current is likely to start to rise due to thermal runaway. If there is sufficient heat sinking it should take a minute for the current to rise to 85mA, and under these conditions the rig will be safe under usual operation. Now reduce the standing current to 35mA, which is the correct point for SSB use.

Having completed this, apply RF drive on CW. The current through the PA transistors should increase to over 150mA (do not keep the key down for more than ten seconds). Connect a 50 ohm dummy load to the aerial socket, and switching the reflectometer switch to reflected power, adjust the reflectometer balance pot for a null, the reflectometer is now set up.

Finally a few words on winding the bifilar toroids. Take two lengths of wire of sufficient length to wind the coil (two feet is sufficient for these coils), and twist them together at about three twists to the inch. Wind the required number of turns onto the ring, and then with an ohmeter, identify the two windings. Now take the beginning of one winding and join it to the end of the other winding. This forms the tap on the coils. It sounds very complicated, but in practice it is not.

Tunbridge PA Components

R1	1K 1/2w	C1,2,3,4	0.1µd (280)	T1, T2	18 turns	26 swg	bifilar	T 50-2
R2	3.2 1/2w	8,9,10,11	Mullard	T3, T4	14 turns	22 swg	bif T 68-2	
R3/4	22Ω 1/4w	C5 C7	mica	L1, L2	20 turns	22 swg	single	
R5	22Ω 1/4w	C6	mica					T 50-2
Rv1	1K preset	Fs1,Fs2	500mA min.	L3, L4	See chart			
Rv2	1K preset							

1980 R.S.G.B. 21MHz CW CONTEST - RESULTS

The results of the above Contest have just been received from The R.S.G.B. In the QRP sections, entries were disappointing. Club members are marked with an \*

<u>QRP - British Isles</u>		<u>QRP - Rest of Europe</u>		<u>QRP - Rest of Europe</u>	
1.	*G4BUE 14595	1.	OZ5KU 1350	1.	VE3KZ 960
2.	G4ARI 4200	2.	UB5CI 693	2.	W4IV 816
3.	G3VMY 3528	3.	OZ1CCB 450	3.	WA0VBW 693
4.	*G4CZB 2451	4.	Y05TA 105	4.	JA0BMS/1 117
5.	*G3KKQ 1092				
6.	*G8PG 384				
7.	*G3IRM 192				

The 1981 Contest is being held on 18th October 1981

PETER BALESTRINI, G3BPT G-QRP-C 1067

I was saddened to hear of the death of G3BPT on April 30th while he was attending the IARU Region 1 Conference in Brighton. Peter was well known through his heavy involvement in R.S.G.B. and RAYNET matters. Peter only joined the Club early this year, through having read complimentary copies of Sprat via the R.S.G.B. The G-QRP-CLUB members extend their sympathies to his family. G3RJV.

Try a CW call on 3560,7030,14060,21060,28060.

## WORLD QRP FEDERATION NEWS.

G8PG has been elected Secretary. Voting on the question of SSB Power is now taking place. There is great divergence of opinion on the matter and more discussions may be required. From next year, 1982, the present DL AGCW Summer Contest will become a WQF event with revised rules, a portable section, and additional awards. Various other matters of importance are under discussion.

### VK NOVICES ON QRP

VK Novices work much QRP but they are restricted to frequencies above 3525 KHz, 21125 KHz and 28100 KHz (14 MHz is not allowed, or 7 MHz). Members are asked to listen for them.

### VK CW QRPP Club Contest.

The weekend before the CQ WW Contest in November. We await full rules.

### SCAG CW CONTEST

6th September 1981, 0000-2359 UTC. International QRP frequencies 3.5 to 28 MHz. Exchange RST/serial number/power/Club and membership number (for our Club use "GQRP"). Score is sum of multipliers x number of QSOs. For each contact add the multiplier of the station worked to your own multiplier. Multipliers are; up to 5W, 5; 6-10W 4, 11-25W 3, 26-100W 2, over 100W 1. Logs to SM3BP, Box 2110, S-82022 Sandarne, Sweden. Send 1 IRC for results.

### DL AGCW QRP ACTIVITY WEEKEND

31 October / 1 November 1981. International QRP frequencies. 80m 1600-1800, 40m 1000-1400, 20m 1100-1200 and 1800-2000, 15m 1000-1100 and 1300-1600, 10m 1300-1600. All UTC. Reports to DK9TZ

### AWARD NEWS

Congratulations to the following on Awards gained.

QRP Countries; 150 GM30XX, 100 OK1DKW, 25 G4CSM G4DYF.

Worked G QRP Club. 140 G4BUE, 80 OK1DKW, 40 G3YNA, 20 G4EBO.

Two-way QRP; 10 DL2FI, G4EBO, G3YNA.

QRP WAC; CT4CH, CT1DP, G4DYF.

### NOVICE INTERNATIONAL QRP FREQUENCIES

Not all the current cw QRP frequencies are available to Novice Operators. We would like suggestions from holders of Novice licences for additional frequencies suitable for communication between or with Novices. (Letters to G8PG please).

### PY ON 7 MHZ

If you hear a weak but T9X PY station on 7 MHz pay particular attention, as it may be one of several dozen Brazilian QRP fans who regularly operate on that band with home brew crystal controlled rigs. Some of these guys operate from really tough locations and they would be thrilled with a report from the UK.

### UK NOVICE LICENCE

We understand that RSGB have submitted proposals to the Home Office. These things take a long time, but there is no doubt that many hundreds of would-be Novices eagerly await the outcome. Many of them are eager to try their hand at QRP, so it is fitting that G QRP C handled their mass appeal a couple of years ago.

ELGAR JAMES - G2FWA (009)

It is with sadness that we heard of the recent death of Edgar, G2FWA. Edgar was amongst the first amateurs to respond when the idea of forming The G-QRP-CLUB was announced. Edgar was a technically astute and active radio amateur. We send our sympathies to Barbara, his xyl, who is licensed as G3XYL.

## THE QRP AMATEUR RADIO CLUB INTERNATIONAL AWARDS PROGRAMME

Following the recent decision to adopt 5 watts DC output as a standard for its' awards programme the Board of The ARCI have made some changes in respect of some of their awards. The restructuring is in keeping with the Club's main objective of showing use of limited power permits maximum enjoyment of amateur radio, minimizes interference on crowded bands and offers operators a genuine challenge. As QRP ARCI's motto says:- "Power is no substitute for skill".

Readers of Sprat interested in the awards programme are urged to write to the new awards manager, Doug Crittenden, WB1ESN, 33 Taylor Street, Pittsfield, Mass, 01201, U.S.A., and those interested in joining QRP ARCI to the Secretary/Treasurer, Edwin R. Lappi, WD4L00, 203 Lynn Drive, Carrboro, North Carolina, 27510, U.S.A.

Leading the awards programme is the popular KW/M Award, or "The Thousand Miles Per Watt Certificate" as it is known. It is available to any amateur transmitting from or receiving the signals of a low power station, such that the Great Circle distance between the two stations, when divided by the power output, equals or exceeds 1000 miles per watt. Additional certificates may be earned on different bands and with different modes. The DXCC QRP is awarded to any amateur for confirmed contacts with stations in 100 of the ARRL's countries list. QRP WAS is available to any amateur for confirmed contacts in each of the 50 States and QRP WAC goes to any amateur for confirmed contacts with a station in each of the six continents.

For each of the above awards, the following rules apply :-

1. Power output may not exceed five watts CW or ten watts PEP on SSB
2. Since members' QRP numbers are not made available by the Club, it will accept as proof for any Club award, a QSO with a Club member giving his/her QRP number and power level in the log data. Otherwise a QSL card is needed for confirmation. Copies of cards or a GCR list is acceptable.
3. Special endorsement seals are available on awards for which power output on both ends of the contact was within the QRP limits set in Rule 1.
4. An all-one band or mode (AOBM) endorsement also is available on request and if supported by log data, QSLs or GCR list.
5. All awards are endorsed for power used and whether "one-way" or "two-way".
6. Under the GCR rule, award sponsors will accept as proof of confirmed contacts and that claimed QSLs are on hand if the list is (a) signed by a radio club official (b) signed by two amateur radio operators or (c) signed by the applicant with his/her signature notarized and attesting that the QSLs are as claimed. If QSLs are sent as proof and are to be returned, they must be accompanied by sufficient postage.

The only Club award to be retained during the restructuring is The QRP 25 Award, which is issued to any amateur who works 25 QRP ARCI members, and endorsements are available for 50,100,200 multiples.

### SCANDINAVIAN CW ACTIVITY GROUP QRP CONTEST 1981

The above Contest will be held from 0000-2400 GMT on 6.9.81 on 3.5 - 28MHz on CW only (activity around QRP frequencies). Exchange RST/QSO number commencing 001/Club and membership number, i.e. 559/001/GQRP 231. You add your own and the other stations multiplier for each QSO, and the final score is the total multiplier points x the number of QSOs. Multipliers are awarded as follows : 1-5watts 5; 6-10 watts 4; 11-25 watts 3; 26-100 watts 2; 101-500 watts 1; Logs, not later than 6.11.81 to SCAG Contest Manager, SM3BP, Box 2110, S-82022 Sandarne, Sweden.

### A MESSAGE TO U.S. MEMBERS FROM G3RJV

As a result of a very kind invitation, I intend to be present at the A.R.R.L. National Convention in Houston, Texas, October 7th/9th 1983, to address the QRP Forum. I hope to spend most of October 1983 in the U.S.A. with my small family. To facilitate this visit on the limited income of a Church of England clergyman, I am willing to "earn" accommodation in family homes by speaking to local groups and clubs and preaching in local Churches. Although this visit is two years hence, I would be very pleased to hear from members who could offer or find hospitality for our visit.

FOR SALE - Dave Wilde, G3EBA (1016)

HW8, modified RIT, filters and QSK break-in (solid state) with Heathkit matching 240 volts PSU - £110.

## MEMBERS NEWS

### Chris Page G4BUE



In the short time I have been writing this column I find it incredible at the rate that QRP has grown throughout the world. I have just been looking through the May 1981 CQ Magazine and in addition to the usual QRP column from Ade, K8EEG, QRP is the main feature in the Novice Column, there is an article on adding a speaker to the HW8, and a QRPer is the star of Hugh Cassidy's story in the DX Column. In the April edition 58 QRP stations were listed in the results of The 1980 WPX CW Contest, an increase of over 100%.

To help prove the above point, Al IØSKK tells me that the newly formed ARI QRP Club in Italy now has over 50 members. Ar Activity Week-end has been earmarked for 31/10 and 1/11 1981. Details next time.

From K8IF comes the news that ARCI have started a SSB net on 21385 Sundays at 2000 GMT, and Tom invites Club members to take part. A joint ARCI/G-QRP-CLUB Activity Week-end is in the planning stages with 8th November as a possible date. The ARCI also hold Activity sessions on the first Sunday of each month on the QRP frequencies as follows :- 7040 - 1900-2000 and 2300-2400; 14060 - 1600-1700 and 2000-2100; 21060 - 1700-1800 and 28060 - 1800-1900. All times in GMT and G-QRP-C Members are invited to join in.

Following his very successful QRP DXpedition to LX over the New Year Willi, DK5RY is planning to operate from either OE or HBØ during the G-QRP-C Activity Week-end, 12/13th September. Also QRV that week-end will be Leo, HB9ASJ, who will be part of a Dxpedition to either 3A2 or ZB2. When Leo is operating he will be on QRP QRGs mainly early morning 3.5 and 7 MHz with his Argonaut on CW.

EA8EY has been working VK and ZL stations on the long path recently and has now worked 96 countries. Aga recently worked KP4 and 4X4 on two-way QRP. Tom, KA1CZF recently worked a VK7 whilst using a 21 MHz dipole inside the shack for a QRB of 10400 miles. Tom has passed his exams to enable him to upgrade onto the QRP frequencies, which resulted in him working G4CSM who was putting a good 559 signal into Mass. with his HW8 to a dipole on 21MHz. Frank, G3YCC put up a 21MHz gamma matched two element yagi and DX with it included 7P8,HI,FP,PJ,VK,8P6,VP9,JA and KP4. Must be working well! The old TA31 has been put into the attic, but still managed to work W1LRR on 14MHz SSB. Another member who has been using an indoor antenna is Edd, G4KLQ. With a 21MHz dipole in the apex of his loft, Edd has worked VP1, PY and VU. An indoor antenna with a difference is used by G4LDG on 3.5MHz. Martin has loaded up the metal hand rail of the stairs in his three storey block of flats. He says there is no problem unless you use QRO - 'fried neighbours, hi'.

Lucky Gus, G8PG, he received a QSL from an EA9 he worked a couple of years ago, and found the EA9 had only been running 1 watt. Gus worked G3BTA recently, who was running 3 watts to one of the new VMOS devices, and described his signal as "potent" The got-away of the Spring goes to George, GM30XX who was QRV during the first Activity Week-end, and did not hear W6SKQ calling him on 28MHz. Besides calling GM30XX on 28MHz, Bob has been working many JA stations and has qualified for The JCC Award for working JA stations located in 100 Japanese Cities. The first Activity Week-end saw KA5HEK on 7MHz, with his Argonaut and inverted vee. Jim did not find any members but mentions what has been said before in this column, that perfect CW increases the chances of success with QRP.

Larry, G14IXL would like to hear from members who have used the Joystick VFA antenna for QRP. Look out for big QRP signals from WA6POC this Summer. Dick has just moved QTH and intends putting up a tower with a 6 element KLM beam on it. Ben,CT4CH writes from the U.S.A. during a break from sailing around the world. He hopes to be QRV in July when he returns home. We have had an influx of YU members and thanks are due to Mike, G4FJF for that. Luring a QSO with Club Station, YU3EOP, Mike had a long QSO with Goran, YU3TVN who was operating, and found they



both had an interest in QRP. Result was that some of Goran's pals joined as well. One of the increasing number of Club members who have sold their QRO gear and gone 100% QRP is G3VTT. Colin, Ian G3ROO and your scribe enjoyed an eyeball QSO at The Maidstone Rally where all the problems facing amateur radio were solved in the beer tent! Congratulations to The Michigan QRP Club. In The 1980 ARRL Field Day they obtained the highest Michigan score using 2 watt rigs.

G3DRP and OK2BMA are claiming a first. Wilf and Pavel recently had a QSO on 3.5MHz and were both using their homebrew HMW8 rigs. G4JFN has just applied for The AGCW 250 QRP Award and Bob says to look out for him this Summer signing GW4JFN/P and /M. Bob also mentions the QRO stations that gather on 060 and suggest we move quietly away from that frequency without telling them, hi hi. Brice, W9PNE has now completed his WAS using 250mW input and is trying to do it again with 100mW. He mentions a dramatic aurora on 13th April, visible in Kentucky. George, GM30XX still needs N.D. to complete his WAS, despite working it twice.

In the congratulations column this time we mention G4FAI, the U.K. Winner of The HA QRP Contest. Tony wrote a very nice account of the Contest in Rad Com. Tony has a daily sked with Lavid, G4IKR on 7036 at 1315 and welcomes calls from other members. Congratulations also to Lou and Maggie. To Maggie, VK3NQQ for giving birth to their first harmonic, a boy and to Lou, VK3DFI for passing the exam to upgrade his licence. Lou would welcome suggestions on how to modify the TS 120V to 5 watts.

Bill, G4EHT has built the SCD receiver, but had trouble with the sidetone which resulted in him designing his own circuit. He appreciated the article for a VFO design in a recent SWM. George, G3IEB has done some mods to his JU6 which has resulted in an increase of one S point, and a very big increase in reports he is getting from UA stations. A 14/144 MHz transverter is the next project. DJ1ZB has equipped his experimental superhet receiver with PCB plug in coils to receive 7 - 28MHz. Ha-Jo has written up the details for a future Sprat.

Bill, G4EHT is enjoying his QRPing, especially when he recently called a ZB2 who came straight back and gave him 559. Eric, G2CGL says his only QSO of note was a HS1 on 21MHz! ZE3JO has now worked 54 countries on 21MHz. Mal said he recently tried 14MHz and was "quite chuffed" to work W5 and 15. He comments that QRP dxing is difficult in ZE land where you have to cover 3/4000 miles to make QSOs, there not being a lot of activity in Africa. After working 200 countries with CW and QRO, PA3ABA turned to QRP, and is now 100% with low power. Since February he has been on 21MHz with his HW8. Using an inverted vee he worked UFG, KV4, VE and W. He then put up a ZL special and in a six hour session one evening worked EA8, EA9, PY, JA, CE, LU and VU. The ZL Special is a good antenna as Gus, G8PG will testify.

GM30XX recently worked VK6JS who was running 5 watts, and Brian, G3SYC has worked 63 members on 3.5MHz crystal controlled. Petr, OK1DKW worked DL7MAM for his 100th member and Gordon, G3PNF has worked his first USA stations on 7MHz, W1-W4 during the ARRL CW Contest. That Contest gave Brice, W9PNE a 250mW input contact with EA8 to complete WAC at that power level. OH5WH has worked 99 countries towards his DXCC and is trying to get his HW8 to transceive with his Drake R4B receiver. During the AGCW QRP/QRP Party on 1st May, G3DNF made 29 QSOs, and several other members report that activity was quite good for this new contest.

G4LEG has built the JU6 and by using a Denco coil and experimenting with the driver PA coupling coil has it working on 3.5MHz. With 100mW input he QSO'd G3KSU, but now has it running at 500mW. G4KUQ after struggling to pass the morse test intends experimenting on 1.8 MHz with one transistor rigs. Ronnie, GM4JGG offers the advice of using plastic drinking straws for feeder spacers, which works well on his 14 MHz zepp. In a recent /P operation George, G3RJV worked 22 countries with his new 14MHz rig, including KV4, UH8 and VE. Tom, EI6BA has been very active lately and gives KL7 as his best DX. G4EBO gives his best DX as a UA# on a Polar Ice Station. John, GM3KNX has been having fun working many W stations and I#SKK has worked A7 and 8Q7 through big pile ups on 14MHz with one watt.

OK1DKW and OK2BMA have been preparing some articles on QRP for their radio magazine which brings me to a plea. Let us hear from you about that design, modification, or tip, etc. Let me hear how your Summer goes, and please remember that QSL cards, for members only, should bear the members number on the back top right hand corner.

Best 73 and good QRP dxing

Chris Page - G4BUE

## SSB News

Ian Keyser G3ROO

Firstly, we open with congratulations to George, G3RJV and Chris, G4BUE in running away with the Short Wave Magazine, volume 38 article prizes. This automatically brings us to another point, articles are not difficult to write and we need them for Sprat. Why not have a go and send something to George, you never know, you might find that you are a latent author!!

Now onto Club news. Firstly, I hope that no one thought I was attacking Gus, G8PG in the last edition of Sprat. It was definitely not meant that way. On this front I was hoping to be able to report favourably, but so far nothing is resolved. Gus has circulated WQF for 26 watts PEP, but with half the votes in, 10 watts PEP leads the field, negotiations are continuing.

A new SSB Contest, 'The Guglielmo Marconi SSB Contest' is being arranged for the 6th/7th February 1982, and to be an annual event the first week in February, full rules will be published as soon as possible. Further to the announcement in Sprat No.25, page 15 regarding The Benelux QRP Club net, Jacob, PA#JHS has written to advise me that they have changed the frequency to 3690, and to recap, the day is Saturday, times 0830 Summer and 0930 Winter.

Finally on club news, 40 metres, the ideal inter G band, is useless in the South of England, and I guess is the same in Europe. I propose that for an experiment, 7070 be looked at, comments to me please. Also, a daily sked, when possible, is being kept between myself, John LA2QAA, Mike G4FJF and Pavel OK2BMA. Mode and power are not stipulated, we just want to hear you. The frequency is 14.333 at 1730 GMT.

## Club Changes

### NEW QTH:

110 DJ7ST:Schlesierweg 13,D-3320 Salgitter - Osterlinde  
116 G4FKH:21 Borda Close,Chelmsford,Essex.CM1 4JY  
143 DK5RY:Schulstrasse 3,D-8860 Noerdlingen.  
249 31 Wellsted St.Hessle Rd. Kingston-upon Hull HU3 3AF  
347 G4CTE:The Stores,Main Rd.Utterby,Louth,Lincs LN11 0TP  
396 IV3ESX:Via C.Kunz 1, I-34138 Trieste.  
399 G4EJN:27 Maudslay Rd.Chapelfields,Cowentry CV5 8EJ  
522 GW4IED:4Glanmor Cres.Newport,Gwent NP1 8AX  
615 G5DEH:Box 2012,RAF Mildenhall,Bury St Edmunds,Suffolk IP28 8NF  
621 R.W.Bethell,7 Grovelands Cl.Charlton Kings,Cheltenham,Glos GL53 8BS  
622 G5CSU:Box 1454 RAF Mildenhall,Suffolk.  
626 G3CCB:44 The Ridgeway,Downend,Fareham.Hants PO16 3RE  
770 G4HMC:4 Oaklands Rd.East SheenmLondon SW14 8NJ  
784 G4JDF: 14 Stablecroft,Springfield,Chelmsford,Essex CM1 5YX  
787 G4AVJ:15 Brue Cres.Burnham-on-Sea,Somerset TA8 1LR  
874 VK4APN:Flat4/421 Sandgate Rd.Albion 4010 Brisbane.  
984 G4ASL:115 Winifred Rd.Coulsdon,Surrey CR3 3JG

### NEW CALLSIGNS:

295:A19N, 522:GW4IED, 569:G3ITL, 600:PA2LIA, 814:G4LKT, 863:G6AOW  
874:VK4APN, 936:G4LZA, 953:add G3VXJ, 959:G4LRY, 1103:EI5EJ and G4LLO  
1131:KBØZA.

CLUB OFFICER ADDRESS CHANGE: VHF MANAGER, G4DHF:65 West St.Bourne.Lincs.(5367)

RESIGNATIONS:296,377,398,420,465,514,524,531,552,744.

THE R.S.G.B. QRP V.H.F.CONTEST AUGUST 2nd 1981  
Certificates of merit will be awarded to the members scoring the most points, and working the furthest DX. Rules as given by the R.S.G.B.  
Copy of log to G4DHF,65 West St.Bourne.Lincs.PE10 9PA. (07782-3108)

WANTED TO BUY: Case and Handbook for BC221 (Portable) and Handbook for Signal Generator Norbrex No.27. Rev. John Wylam,G8ROO,St. Silas Vicarage, 196 Heaton Park Rd. Newcastle upon Tyne. NE6 5AP.

WANTED: DX40 TX with VF1U VFO and Manuals: J.W.MacKay,G2BYP.  
11 Lansdowne Grove, Whitehaven. Cumbria.

## New Members

1082 GW3COI J. Worthington, Penrhynbach, Bwlchtocyn, Abersoch, LL53 7BU  
 1083 G3RZP P.Chadwick, 50 Ravenglass Rd., Westlea, Swindon, Wilts.  
 1084 H.Hill, 21 Cedar Ave., Ashton, Preston, Lancashire, PR2 1ST  
 1085 I2VRF G. Vaia, Via A. Grandi 5, 20091 Bresso (MI), Italy.  
 1086 EA8MO Luis Doreste Silva, 24-6-2, Las Palmas de Gran Canaria,  
 1087 E. Noble, 11 Kathleen Rd., Hull, HU8 8EB. Islas Canarias.  
 1088 B. Chance, 88 Crossfield Lane, Skellow, Doncaster, DN6 8PS  
 1089 P. Velzeboer, 12 Beamont Cres., New Plymouth, New Zealand.  
 1090 PAOWX G. Kooyman, Wilgenlaan 2, 1195 JP Amstelveen, The Netherlands.  
 1091 G3LQI S. Williams, 58 Grinstead Lane, Lancing, W. Sussex.  
 1092 G4ETZ F. Webb, 166 Glastonbury Rd., Yardley Wood, Birmingham.  
 1093 G6BAI I. Deverill, 877 Chester Rd., Chelmsley Wood, Birmingham.  
 1094 KA8DFJ L. Switzer, 654 Georgia, Marysville, Mich. 48040, USA.  
 1095 A. Forster, 35 Ridler Rd, Lydney, Glos. GL15 5BL  
 1096 G8XSS J. Brown, 13 Shannon Court, Kenton Bank Foot, Newcastle, NE3 2XF  
 1097 G14KJT K. Taylor, No. 2 Braehill Parade, Horseshoe Rd., Belfast, N.Ire.  
 1098 S. Thomas, 64 Victoria Rd., Aigburtin, Liverpool, LI7ODP.  
 1099 GW3ITT J. Cairns, 2 Ffordd Tirion, Sychdyn, Mold, Clwyd, CH7 6DY.  
 1100 N7DJU P. Adamasak, 2075 SW 78 m Ave., Portland, Ore. 97225, USA.  
 1101 G44LFZ W. Nicoll, 124 Hilton Avenue, Aberdeen, AB2 2LH, Scotland.  
 1102 G3AWZ G. Pearson, 28 Jubilee Rd., Street, Somerset, BA16 0QP.  
 1103 R. Gorman, Coosan Point, Athlone, County Westmeath, Eire.  
 1104 GI6AEJ J. McDermott, 29 Lawson Park, Ballymagorry, Strabane, Co.Turone,  
 1105 J. Lewis, 5 Summer Hill Road, Bexhill-on-Sea, E.Sussex. N.Ire.  
 1106 WA2AHP/I A. Morrison, 94 Athelstane Rd., Newton Centre, MA 02159, USA  
 1107 G4KPH D. Lewis, 4 Raymond Court, Hampden Rd., Muswell Hill, London,  
 1108 K8KIR L. Flake, P.O.Box 92, Wetmore, Mich. 49895, USA. N10 2HS  
 1109 GICRQ R.Quigg, 101 Belvoir Drive, Belfast, N.Ireland, BT8 4DN.  
 1110 WA8TCG H. Werfele, 3121 Jacob Street, Wheeling, W.Va. 26003, USA.  
 1111 G8VJA T. Brown, 67 Sherbourne Rd., Middleton, Manchester, M24 3FF  
 1112 F. Cartlidge, 1 Chelford Rd., Somerford, Congleton, Cheshire.  
 1113 G3YHM R. Harvey, 26 Birkdale Rd., Worthing, Sussex.  
 1114 A. Denin, P.O.Box 10021, Amarillo, Texas 79106, USA.  
 1115 A3SDE D. Greer, Box 64, Nuku 'Alofa, Tonga, S. Pacific.  
 1116 F. Rogers, 144-16 119 Ave., Jamaica, NY 11436, USA.  
 1117 J. Lloyd, 72 Thornyville Villas, Oreston, Plymstock Plymouth,  
 1118 KA7CKU W. Magee, 400 Date St., Mtn. Home ID 83647, USA. Devon.  
 1119 H. Little-Kerr, 34 Southfield Dr., Slamannan, Falkirk, FK1 3NG.  
 1120 Sqn.Ldr.R.Salmon, 19 Penarrow Cl., Falmouth, Cornwall, TR11 4QN  
 1121 G3ICH P.Pitt, "Broadfield", Symonsburrow, Hemyock, Collumpton, Devon.  
 1122 WA8TER P. Gates, 12235 Dawn Haven Ave., Lansing, Michigan 38917, USA  
 1123 G8SNG P. Charlesworth, Trenchard Hall Officers' Mess, RAF College,  
 Cranwell, Sleaford,  
 Lincs.

1124 G4KIN P. Taylor, 1 Hornby Place, Walton, Liverpool, L93DB.  
1125 GM8LDK R. Craig, 38 Myrtle Rd., Scone Perth, Perthshire, PH2 6QY  
1126 G3ZJJ M. Peet, 31 White Str., West Lavington, Devizes, Wilts. SN10 4LP  
1127 G3XXR P. Higton, 5 Brian Ave., Dalton, Huddersfield, W. Yorks, HD5 8DX  
1128 WA2ZVL J. Sheehe, R.D. # 1, Box 139C, Lowman N.Y. 14861, USA.  
1129 YO6HQ D. Gheorghe, P.O. Box 98, R-2200 Brasov, ROMANIA.  
1130 G4KKI W. Stevenson, 10 Crompton St., Swinton, Lancs. M27 2BD.  
1131 KAØEDJ R. Bell, 3057 Gunnison Ave., Grand Junction, Colorado 8150, USA  
1132 KA1FEK R. Birdsey, 99 Airline Rd., Clinton, Conn. 06413, USA.  
1133 G2UV W. Corsham, 143 Abbotts Drive, Wembley, Mdx., HA0 3SH.  
1134 VE3EYH J. Fraser, 60 Foothills Dr., Ottawa, Ontario, K2H 6K3.  
1135 G4KJA B. Preston, 24 Nursery Close, Hucknall Notts. NG15 6DQ  
1136 YU3TVN K. Goran, Kersnikova 32, 6300 Celje, Yugoslavija.  
1137 YU3TFW Trnovlje 169a, 6300 Celje, Yugoslavija.  
1138 YU3TPQ Kugler Zvone, Presihova 5, 63310 Zalec, Yugoslavija.  
1139 G4CVF B. Sheppard, 71 Carron Drive, Werrington, Peterborough, PE4 6NY  
1140 G4FIE P.Groom, 2a The Chestnuts, Countesthorpe, Leics.  
1141 J. Williamson, 1 Priory Crescent, Kents Bank, Grange-over-Sands,  
1142 G4ABF C. Watson, 3 Kingshill Close, Malvern, Worcs. Cumbria.  
1143 WØCH D. Bixler, P.O.Box 332, Joplin, Missouri 64801, USA.  
1144 G4IQD N. Sivapragasam, 64 Crofts Rd., Harrow, Middx. HA1 2PJ.  
1145 G3WQW F. Sims, 71 Lambley Lane, Burton Joyce, Nottingham, NG14 5BL.  
1146 SM6AWA G. Lilja, Gardesvagen 14 B, S-43500 Molnilycke, Sweden.  
1147 G4KWO G. Phillips, 38 Milholme Green, Solihull, W. Midlands.  
1148 G4LIB S. Hunt, 33 Kimberley Road, Solihull, W. Midlands.  
1149 I1OUE E. Reggiani, CH-6601 Locarno, Switzerland.  
1150 G3NII R. Porter, 16 Girone Close, Hitchin, Herts.  
1151 G. Catherine, 18 Rue Mitoyenne, 7250 Eugies, Belgium.  
1152 EC8GB A. Morales, P.Box 162, Santa Cruz de La Palma, Canary Is., Spain  
1153 C. Squarell, 20 Stoneywood, Harlow, CM1 8AU, Essex.  
1154 G. Cartwright, 1 Patshull Rd., Albrighton, Wolverhampton, W.Mids  
1155 G4BYM B. Buzzing, 10 Oakdene, Stourport-on-Severn, Worce. DY13 9NF.  
1156 SM5CO A. Alexanderson, Siljansvagen 74, Johanneshor 12170, Sweden.  
1157 GW3NNE R. Evans, Cemlyn, Nefyn, Pwllheli, Gwynedd, LL536EG.