SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED·TO·LOW·POWER·COMMUNICATION

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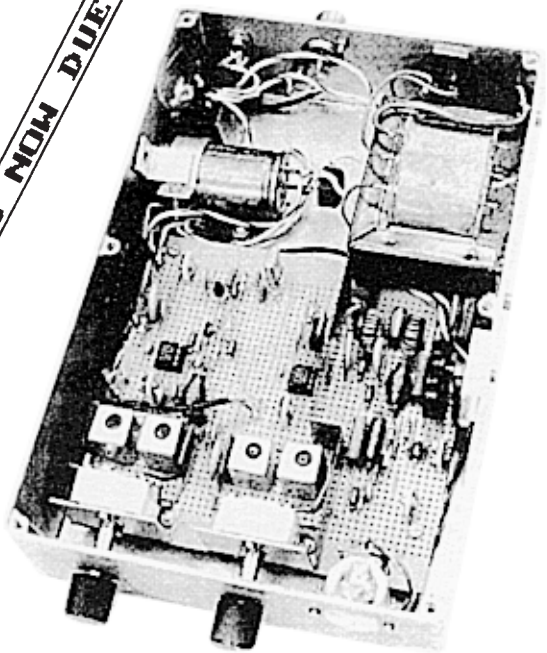
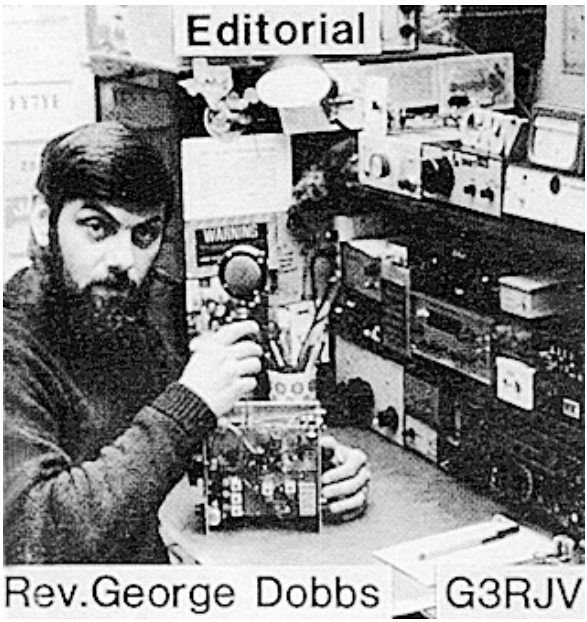
ALL SUBSCRIPTIONS NOW DUE



THE G4DHM 160M TRANSVERTER (SPRAT 45)
AS BUILT BY JOHN (G3INZ)

14MHz TRANSVERTER. 160M TRANSMITTER. DIRECT CONVERSION RECEIVER
20M SUPERHET TRANSCEIVER. G3LDO DOUBLE D ANTENNA (UPDATED)
80M TRANSMITTER. SEMI-BREAKIN T/R SWITCH. THE QSK 1 TRANSCEIVER
QRP NEWS - VHF - SSB - AWARDS

JOURNAL OF THE G QRP CLUB



St. Aidan's Vicarage,
498 Manchester Rd
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The G QRP CLUB and DAYTON

The annual **HAMVENTION** in Dayton, Ohio, is the largest amateur radio event in the world. Some 25,000 radio amateurs from all parts of the world attend the event. 25 Chartered Planes are going from Japan in '87!

For the last two years, Chris, G4BUE, has been to the Dayton Hamvention and represented the interests of the G QRP Club at his own expense. His experience of the Hamvention is that the club could benefit from a proper exposure at Dayton. Although we have a fair portion of members in the USA, we have hardly touched the tip of a hugh iceburg. The RSGB Convention at the NEC has, over the years, done well for the club. We have always recruited lots of new members and sold club items to the extent that we have made a profit.

In recent weeks officers of the club have been discussing the viability of mounting a major G QRP Club stand at the Dayton Convention. The idea is to send a party of (say) five experienced members to Dayton on half club funding. The trip would be quick, cheap and arduous : a cheap flight to New York, Greyhound bus (sleeping on the bus) to Ohio, 4 days at the Convention (it opens 6am to 8pm) and the same route back, all in a week. Each person would be expected to find about £200 of his own money for the trip.

******Continued on the next page.....

SUBSCRIPTION INFORMATION

The annual subscription for G-QRP-Club is £5 (cash or cheque) or US $10 (cash) or US $12 (check) payable to G-QRP-CLUB. All subscriptions become due on 1st January for the coming year and should be paid by 31st January. Members who have not renewed by 31st January will be **automatically deleted** from the membership. Subscriptions should be sent to the Membership Secretary, Chris Page G4BUE, "Alamosa", The Paddocks, Upper Beeding, Steyning, West Sussex, BN4 3JW, England.

What would the club gain? Naturally exposure at the largest amateur radio event in the world. But we also plan to run at a profit by recruitment, sales of club items and kits and if the members we recruit stick with the club (and most do) the profit will be greater.

That is the idea - we require two responses from members.....
1) What do you think about the idea? We want to know quickly because plans must be finalised early in the New Year.
2) Any offers to join the party...but think carefully, it will cost you £200 to spend a week of travel (sleeping on planes and buses) and constant hard work. Also it would required experienced QRPers - those whose knowledge of the club, technical and operational matters in QRP and general amateur radio knowledge is such that they would be an asset on the stand.

Let us know - write to G3RJV or G4BUE as soon as possible.

73 George

ENJOY YOUR QRP IN 1987

IMPORTANT

SUBSCRIPTION AND ADMINISTRATION CHANGES

As was mentioned on page 21 of the last SPRAT we are going over to a new system for the payment of subscriptions. If you wish to remain a member of G-QRP-CLUB please ensure you send £5 (cheque or cash) or US $10 (cash) or US $12 (check) payable to G-QRP-CLUB to the Membership Secretary, Chris Page G4BUE, "Alamosa", The Paddocks, Upper Beeding, Steyning, West Sussex, BN4 3JW by 31st January 1987. Members who have not renewed by then will be automatically deleted from the Club records and the SPRAT mailing list.

At the time of writing Chris G4BUE has completed the new membership data base on his BBC computer, and if all goes well the label on your envelope will have been printed from it. It has taken Chris over 100 hours of keyboard input to enter the 3000 members records and he tells us it is quite possible the odd mistake has been made! Members are asked to check the details on their address label and let him know of any mistakes.

The data base has been compiled with disk storage space in mind, and the size of each record has had to be restricted. This has resulted in some changes being made to the format of the labels. Titles, eg Mr, Mrs, Rev, Doctor, etc, are not shown and where an address is very long it has been abbreviated. If any member feels their address has been abbreviated too much, please let Chris know.

The same data base is being used to record members subscriptions and due to the system being used can easily handle advance subscriptions. Overseas members are therefore advised to renew in good time and/or sending two or three years subscriptions in advance. Unfortunately we cannot yet deal with life memberships or payments by Bank direct debit or standing order.

Finally, despite constant reminders in SPRAT, members are still sending subscriptions without quoting their Club number and call sign. With over 3000 members Chris cannot find you on the computer without them, so **PLEASE PLEASE** quote your Club membership number and call sign when sending payments.

ALL SUBSCRIPTIONS ARE DUE BY JANUARY 31st

14MHz TRANSVERTER

By Elmar Voller DL2QA

I have been running an FT290R for VHF, but have been disappointed about the activity in SSB/CW here. Now, I would like to have a stable 20 metre rig, and found the following circuit for a transverter, which goes with my FT290R. It is not new, but designed for 20 and linear operation.

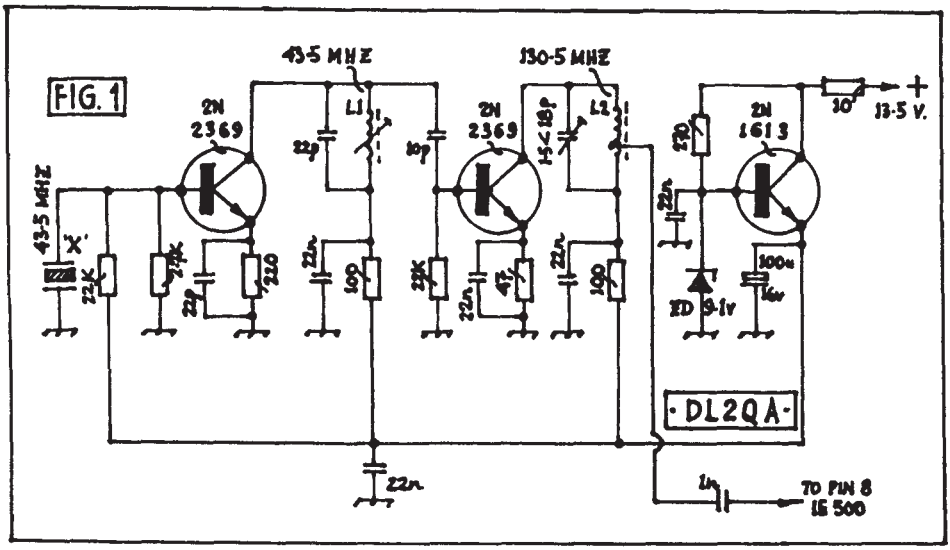
The FT290R must be operated with low power, (0.5w). The 43.5MHz oscillator is tripled to 130.5MHz and therfore 14.0-14.35 is now 144.5-144.85 on the rig.

Sure, you can use another exciter if the signal levels are nearly the same. The PA stage must draw about 20-25mA without any signal, (adjust with 1K pot). The diode 1N4148 must be soldered with the cathode side on the heatsink of 2SC1678. A heatsink for 2N3866 is also recommended. The transmiter delivers at least 3 watts on 50 ohms.

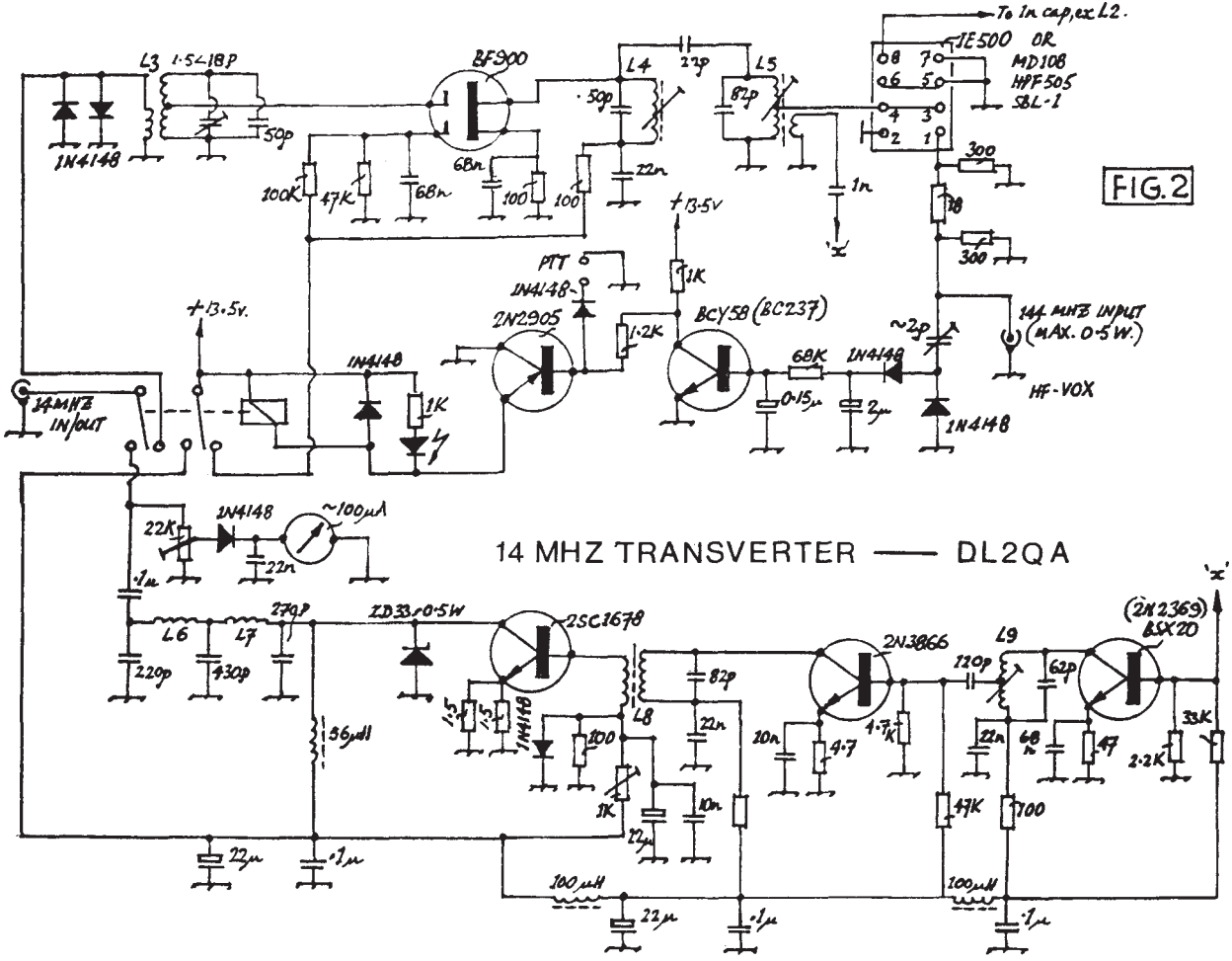
With a 12AVQ gound plane, I have made a lot of conacts, both with CW and SSB. I am always surprised about the performance of this equipment.

Coil Details

L1	12 turns 0.4mm CUL
L2	6 turns 0.4mm CUL, tapped 2 turns from the cold end
L3	25 turns 0.25mm CUL, 3 turns for the antenna
L4/L5	20 turns 0.4mm CUL, 3 turns to trnsmitter
L6/L7	11 turns 0.5mm CUL, self supporting
L8	18 turns 0.4mm CUL, 3 turns to PA - 2SC1678
L9	18 turns 0.4mm CUL, tapped 3 turns from the cole end



TRY THE INTERNATIONAL CW QRP CALLING FREQUENCIES: 2560, 7030, 101060 14060, 21060, 28060 KHz ALL ± QRM


14 MHZ TRANSVERTER —— DL2QA
FIG.2
To 1st cap, ex L2.
TE500 OR
MD108
HPF505
SBL-1
L3 1·5-18P
IN4148
BF900
L4
L5
27p
82p
50p
68n
22n
100K
47K
100
1n
300
78
+13·5V
PTT
1K
IN4148
2N2905
1·2K
BCY58 (BC237)
~2p
144 MHZ INPUT
(MAX. 0·5W.)
68K
0·15µ
2µ
HF-VOX
14MHZ
IN/OUT
22K
~100µA
·1µ
L6
L7
270p
220p
430p
ZD33 0·5W
2SC1678
56µH
2N3866
L9
120p
62p
(2N2369)
BSX20
10n
4·7
1·7K
47K
700
33K
2·2K
100µH
22µ
·1µ

G4VAM 160m TRANSMITTER

By Paul Harrison G4VAM

The following circuit was adapted from page 38 of Solid State Design. Power output is approximately 2.5 - 3 watts depending upon the 33 ohms resistor in the emitter of (c) or the base resistor in (d). The base resistor in the final should be kept as low as possible to aid circuit stability without losing too much drive, (12 - 27 ohms).

L1 50t tapped 10t on 3/8" former Vc + C 100pF + 470pF SM
(a) and (b) 2N706 or BC108 etc. (c) 2N3053 (d) 2SC1096 (45p each at Birkett)
D1 1N914 etc. T1 FT37-61 25t No.28 + 4t No.28 L1/L2 30t No.28 T-50-2
RFC as many turns of No.30 enamell wire that can be wound onto ferrite bead

My aim, by sending this circuit, is to boost activity on 160 metres, which is sadly neglected by Club members. An 80 metre antenna suitably loaded will work on 160 wheh fed against a reasonable earth. I use the ATU shown in Fig. 2 along with an 84 feet long wire normally used on 80 metres as part of a W3EDP antenna.

L4 80 - 100t on former placed on ferrite rod, tapped every 10t and tuned to resonance by C. This tuner works on antennas of 3/8 to 1/8 of a wavelength.

To begin with, members might like to adapt their Oners to 160 metre operation by purchasing a 1843KHz crystal and using the half wave filter shown in the circuit. If members cannot obtain 1843 crystals then contact me and I hope to be able to sell them for £2.50 each, inclusive of post and packing.

So far I have worked G, GM, LA, OH and DL. Remember other UK stations who are operating within their licensing conditions will only be 3 - 6dB up on your QRP signal. I'm looking forward to meeting other members on the band, especially in the daytime to see how effective groundwave propogation is.

160 METRE QRP FREQUENCY

By Colin Turner G3VTT, "Hurley", Weavering St., MAIDSTONE, Kent.

For many years now we have suggested that the frequency of 1850KHz is used as our QRP channel on Top Band. Now may be the time to think about changing this frequency for two reasons:-

1. There are a considerable number of crystals becoming available, both here in the UK and in Europe, suitable for microprocessor operation on 1843.2KHz.

2. Some European countries, for example Holland, are only permitted operation between 1825 and 1835KHz.

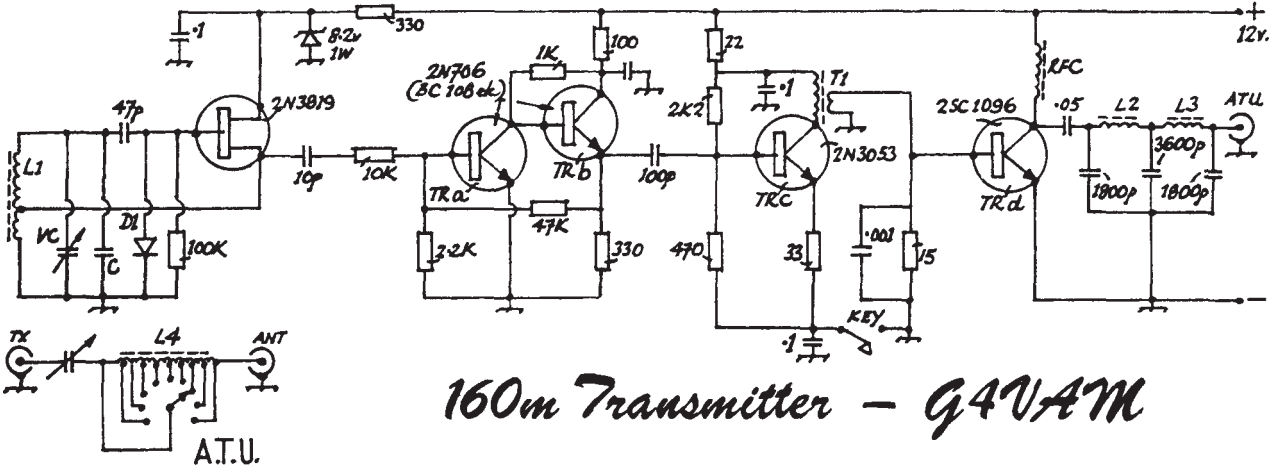
In my capacity as WQF Representative I would like to invite suggestions into a possible frequency change. If you have any views on the matter could you please drop me a line, and I will give some thought to the matter.

Just how many of our members operate 160 metres QRP? with some of the strong signals heard in this band it may be argued not many. Now could be a good time to show the QRO merchants that they should be working at their licensed power levels and lower.

MEMBERS ADS

FOR SALE HW8 mint, unmodified and professionally built.
WANTED Argonaut, 515 preferred, or similar QRP SSB/CW TX/RX. Also TX (or TX/RX) old type. 80 metre VFO/PA + Amp. modular. Also wanted 200v + 6.3v power pack. G2CYN, Bedford 711538 or 25 High St, Olney, Bucks.

FOR SALE Hygain TH3JNR 3 element beam antenna for 10/15/20 metres and CD45 rotator complete with 25 metres 8 way control cable. Excellent condition. Buyer collects. £320. G4MBP, QTHR or Cheltenham (0242) 527651.



160m Transmitter – G4VAM

"TENOR" 80M DC RECEIVER

By Phil Hobson G4HOJ

The front end is a diode mixer as you can see, and it is the simplest front end which gives good results. Other mixers could be used of course, to suit the builder. Low pass and matching are achieved with R1 and C4. Two direct coupled standard configuration transistors follow with more shaping from C9. A simple buffer stage follows (more shaping from C14), and into AF gain. The final section comprises a Darlington pair with built in active low pass filtering to give reasonable output into the very cheap, lightweight low impedance phones. I wire a stereo socket so the elements are in series, giving 32 or 16 ohms, depending on the type. Under good operating conditions a 35 or 80 ohm speaker can also be connected for quiet room listening.

The AGC system takes off from the top end of the AF gain control, and amplifies into TR6. The amplified AF is passed through a delay element, R9, and then to a rectification circuit. C7 charges to an average level and this DC level is passed through a time constant resistor, R4, (this can be altered, longer delay for larger value), to the base of another transistor which acts as an AC current robbing circuit from the first two stages through C8.

The output is affected for signals well off tune if C13 is omitted, and the value given for this capacitor gives a good compromise between AGC sensitivity and AGC bandwidth. The signal path continues from the AF gain control into a Darlington pair with active filtering. The values given give a good SSB bandwidth for general purpose use, but bandwidth can be reduced for CW only by increasing the marked resistors to 3.3K. If these resistors are changed C13 can be increased to 10n, R1 to 5.6K and C9 to 10n to sharpen up the response further.

A DC amplifier is coupled to the AGC line and as shown drives a 500uA meter with very useful scale proportion. R3 sets full scale and R21/22 ratio sets zero. Alter these resistors for different meters.

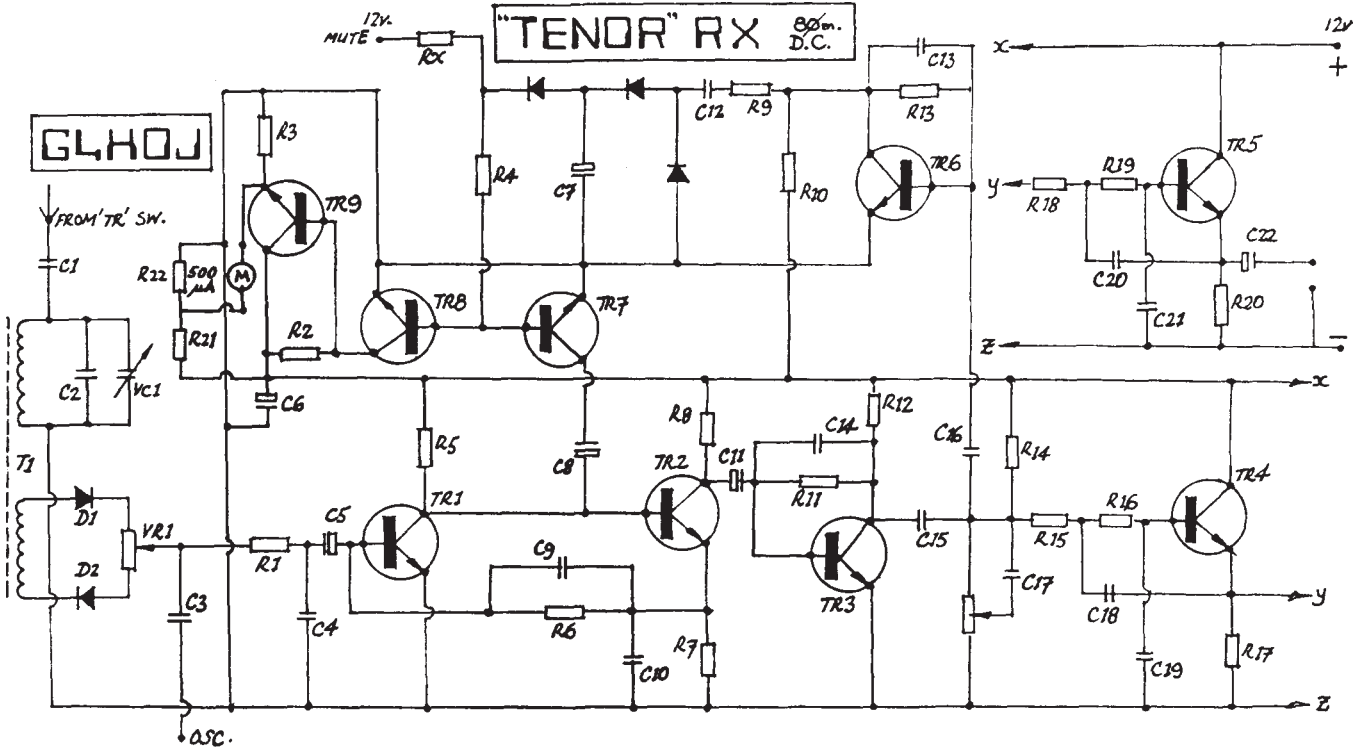
Finally, I did not know what to call it, everybody seems to have a name for their creations nowadays. I totalled up the cost of all the components, (new and from a single source), and it came to £9.99, although I used salvaged bits etc. So I thought of the "Tenner" or "Tenor". Other than that it is just the HOJ 80m RX. Other bands are available, I did try it with a multiband transmitter and no padding capacitor, and using the salvaged polycon, both sections, the front end would tune 80, 40, 30 and 20 (just!). I've used the receiver birds nested, then on a board, with various transmitter oscillators coupled in, and the results have been most encouraging. I've designed a board which can either be one piece or four modular sections which is 11 x 4 cms. I have not included this as I know most people have their own special building ways. The circuit draws around 15mA from a 12v dryfit rechargeable cell. No problems with this low impedance supply, maybe more line decoupling if higher imepedance supplies are used.

Anyway, that's it. I like it. After the Oner, the "Tenor" represents some inflation doesn't it? I am thinking about a transceiver based on this for the construction contest, but maybe this will be accepted.

DX and RX can be omitted if muting is not required, (1N914, 100K)
TR8, TR9, R2, R3, R21 and R22 can be omitted if meter display not required

R1	3.3K	R2	100K	R3	4.7K	R4	10K	R5	39K	R6	1.2M
R7	470	R8	2.2K	R9	2.2K	R10	12K	R11	1.2M	R12	12K
R13	680K	R14	150K	R15	1.5K*	R16	1.5K*	R17	2.2K	R18	1.5K*
R19	1.5K*	R20	2.2K	R21	4.7K	R22	47K	C1	47pF	C2	180pF
C3	1n	C4	0.1uF	C5	1uF	C6	470uF 16v	C7	40uF 10v		
C8	47uF 10v	C9	4n7	C10	22uF 6.3v	C11	1uF 50v	C12	0.47uF	C13	4n7
C14	1n	C15	0.47uF	C16	0.47uF	C17	0.47uF	C18	0.1uF	C19	0.022uF
C20	0.1uF	C21	0.1uF	C21	0.022uF	C22	10uF 16v	VC1	300pF polycon		

T1 T50-2 prim. 30t, sec. 3t bifiliar
D1-D4 1N914 VR1 1K preset VR2 100K log Transistors all BC183 Meter 500uA


"TENOR" RX
80m.
D.C.
12v.
MUTE
RX
GL4HOJ
FROM 'TR' SW.
C1
R22
500 µA
M
R21
C2
VC1
T1
D1
D2
VR1
C3
OSC.
R1
C4
C5
R3
TR9
R2
C6
TR8
TR7
R4
C7
R5
TR1
C8
C9
R6
C10
R7
R8
TR2
C11
C14
R11
TR3
R12
C16
C15
R14
R15
C17
R16
C18
TR4
C19
R17
C12
R9
C13
R13
R10
TR6
TR5
R18
R19
C20
C21
C22
R20
12v
+
−
x
y
z

AUDIO PREAMP.
A.F. FILTER
AUDIO AMP.
V.F.O.
BC108
μA 741
TAA611C
MUTING RLA
MUTE
RLA MONITOR NOTE
VFO OUT
RLA (TX)
17ECB

FIG.1

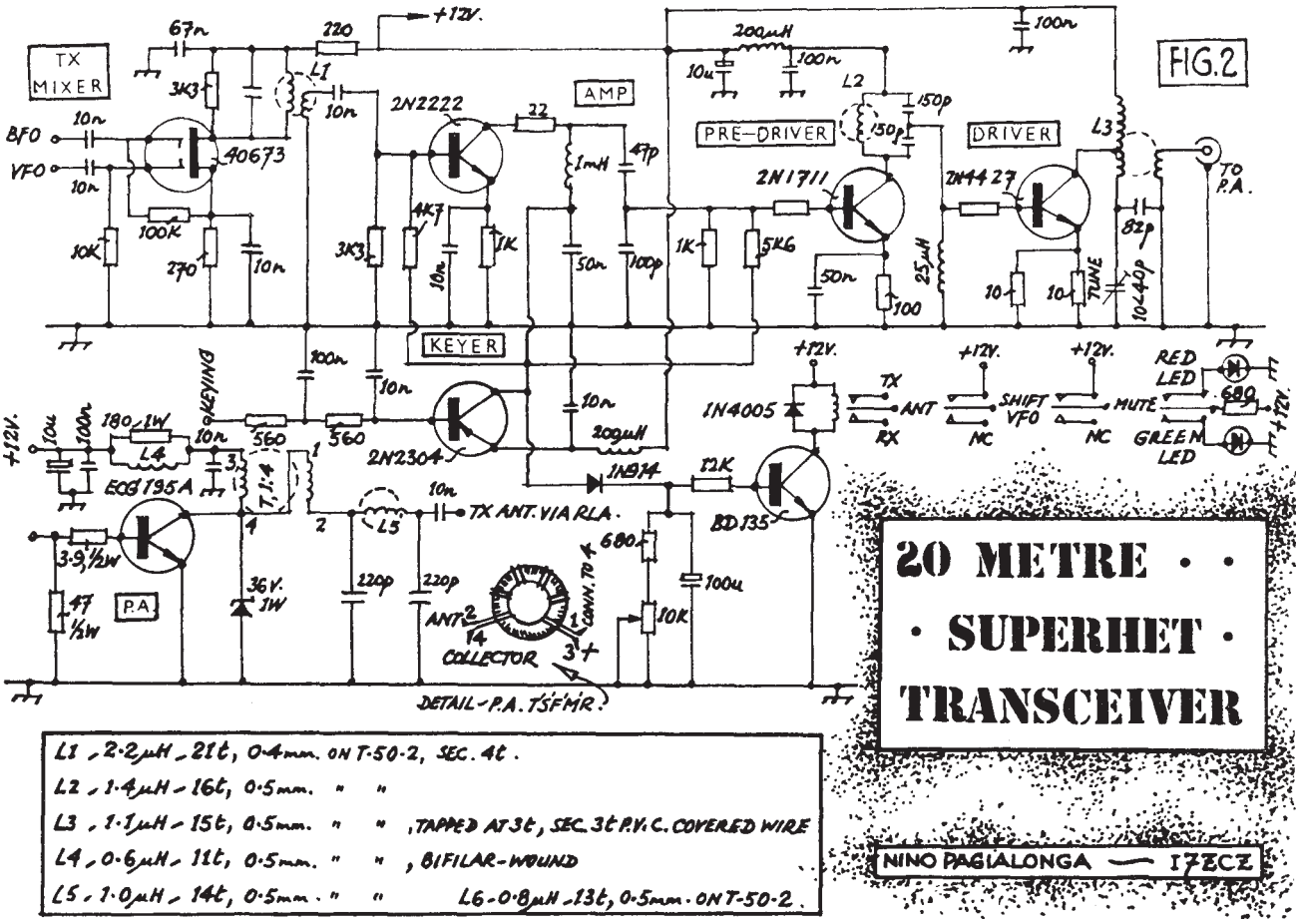


FIG.2
20 METRE · ·
· SUPERHET ·
TRANSCEIVER
NINO PAGIALONGA — I7ZCZ
TX MIXER
AMP
PRE-DRIVER
DRIVER
KEYER
P.A.
BFO
VFO
+12V.
TO P.A.
TX ANT. VIA R.L.A.
DETAIL - P.A. TS'FMR.
RED LED
GREEN LED
TX
RX
ANT
SHIFT VFO
MUTE
NC
TUNE
COLLECTOR
CONN. TO 4
L1 - 2·2µH - 21t, 0·4mm. ON T-50-2, SEC. 4t.
L2 - 1·4µH - 16t, 0·5mm. " "
L3 - 1·1µH - 15t, 0·5mm. " " , TAPPED AT 3t, SEC. 3t P.V.C. COVERED WIRE
L4 - 0·6µH - 11t, 0·5mm. " " , BIFILAR-WOUND
L5 - 1·0µH - 14t, 0·5mm. " " L6 - 0·8µH - 13t, 0·5mm. ON T-50-2.

Radio Sporting is an international monthly magazine written by and for active amateurs. It contains a great deal of information on contests, DXCC, antennas etc., and although it is primarily aimed at the QRO operator, will be of interest to the active HF QRPer. Details can be obtained from Box 65, Don Mills, ON, Canada, M3C 2R6. Chris, G4BUE enrolled as a subscriber at Dayton this year, and says he finds it very good value in that it is one of the few magazines that he actually reads from cover to cover!

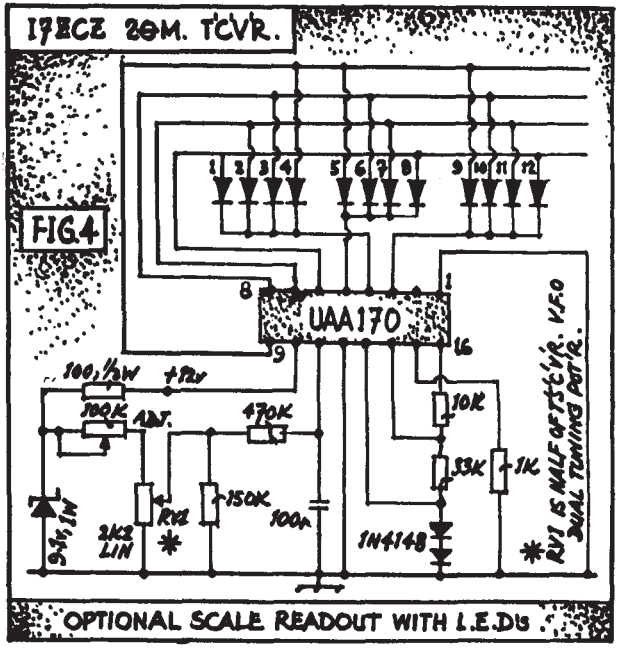
A SUPERHET TRANSCEIVER FOR TWENTY METRES

By Nino Paglialonga I7ZCZ

SPECIFICATION:
Sensitivity: Better than 1uV for 10dB S+N/N
Bandpass: 1350Hz at -6dB without AF filter, about 50Hz with filter
TX power: 5 watts out at 13.6 volts; 4.2 watts out at 12 volts
Power consumption: RX about 200mA: TX about 950mA
Mode: CW only

The circuits should be clear in themselves. The important point is that surplus CB crystals have been used throughout. The crystals at a nominal 9Mz are 27MHz CB crystals on their fundamentals. The prototype used 27135 for the IF filter, (all the same frequency), and the BFO. It is important to screen the VFO, BFO and TX mixer. The power transistor is a CB type, others may serve the purpose. The circuit includes a novel option LED readout. The 2K2 pot is part of a ganged pot half tuning the VFO, and the other half the readout. 12 volts is supplied to pin 8 of the IC.

Setting up the receiver can be done by tuning for maximum signal but pretuning with a GDO will help. The TX is set by feeding into a 50 ohm dummy load and tuning all the cores for maximum output. The IF flter is set for the best selectivity by adjusting the 30pF capacitor. Naturallly a commercial filter could be used but the author's prototype worked very well indeed. It would also be possible to make up a ladder filter with similar crystals. The author claims that the receiver sensitivity is as good as his FT101.



WANTED: Copy of SOLID STATE DESIGN FOR THE RADIO AMATEUR and Back Issues of SPRAT. Jim Sneddon,3 Royal Ct,Penicuik,Lothian,EH26 0HZ.

WANTED: Argonaut 515, state price: David, G4HYY, Todmorden (070681)5342

FURTHER EVOLUTION OF THE G3LDO DOUBLE D ANTENNA
by Peter Dodd, G3LDO

In the Spring 1984 edition of SPRAT I described a compact two element wire beam called the "Double D". The antenna was a two element compact wire beam with bent elements to avoid using loading coils or traps. The configuration is shown in Fig 1, together with the design data at the bottom of the page.
A multi-band variation worked very well by parallelling the driven elements and feeding them with the one coax line as shown in Fig 2.
I wanted a beam for the the 7 and 10 MHz bands, the original design was still rather massive with a spread over 27ft on 10.1MHz.
According to the graphs from the ARRL handbook, it should be possible to reduce the spacing and the gain should be maintained, Fig 3, provided losses due to the lower radiation resistance, Fig 4, can be overcome. Fig 4 is derived from the ARRL Antenna Handbook and the Double-D radiation resistance plotted on it.
But how small can the elements be made?. VHF models of various bent elements were constructed and various configurations tried out. The element retained the gain of a dipole until the horizontal section was reduced to 0.16 wavelenth and is illustrated in Fig 5.
A parasitic element was then added with an element spacing of 0.16 wavelength There was no measurable difference between the gain of this model and the two element beam used as a standard of comparison provided the spacing was greater than 0.15 wavelength.
An antenna was constructed for 14MHz and is illustrated in Fig 6. One inch diameter tubing was used although the largest diameter tube practicable should be used to reduce resistance losses. The driven element was gamma matched.
Initially, the front to back ratio was poor in spite of many adjustments of the reflector. Reflector resonances between 13.9 and 13.1 were tried with no improvement in antenna performance.
In desperation the parasitic element was shortened to try it as a director. At 14.0MHz the element commenced to work as a reflector. At 14.1 the front to back ratio improved. The element continued to operate as a reflector, with a reduced front to back ratio, up to 14.45MHz. The final reflector resonance chosen was 14.1MHz because it appeared to give the greatest gain.
This antenna is horizontally polarized because most of the current flows in the centre horizontal section. To obtain a reasonable low angle of radiation the antenna must be placed as high as possible; the same rule that applies to a dipole.
The 14MHz model was only used for two months before I moved QTH. It appeared to give the same performance as a two element beam or quad at 30 feet. I now have a model for 10 MHz under construction and will report on its effectivness later.

DESIGN DATA

TABLE 1
Standard Double-D

A. L=3350/f
B. L=1336/f
D. L=700/f
E. L=1336/f

TABLE 2
Compact Double-D

A. L=1870/f f=frequency in MHz
B. L=2226/f L=Length in inches
C. L=1176/f (inches X 0.254 for cm)
D. L=620/f Gamma Rod
Gamma Capacitance (pf) 1974/f
Element/gamma rod diameter ratio 2:1 to 3:1

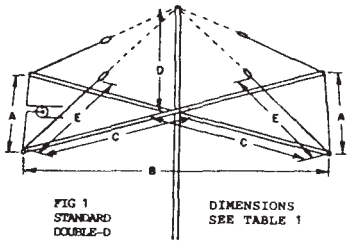


FIG 1
STANDARD
DOUBLE-D

DIMENSIONS
SEE TABLE 1

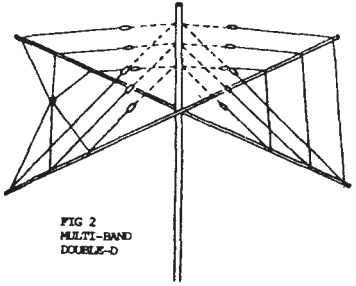


FIG 2
MULTI-BAND
DOUBLE-D

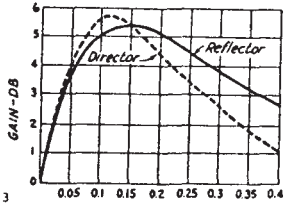


FIG 3
GAIN VERSUS ELEMENT
SPACING, From ARRL
Antenna Handbook

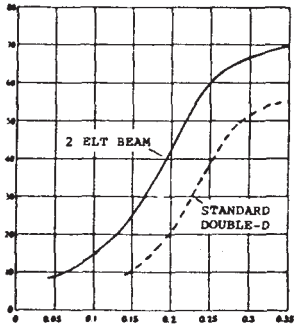


FIG 4
REFLECTOR/RADIATION RESISTANCE GRAPH
from
ARRL Antenna Handbook

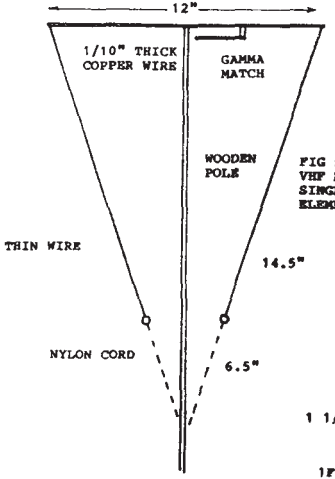
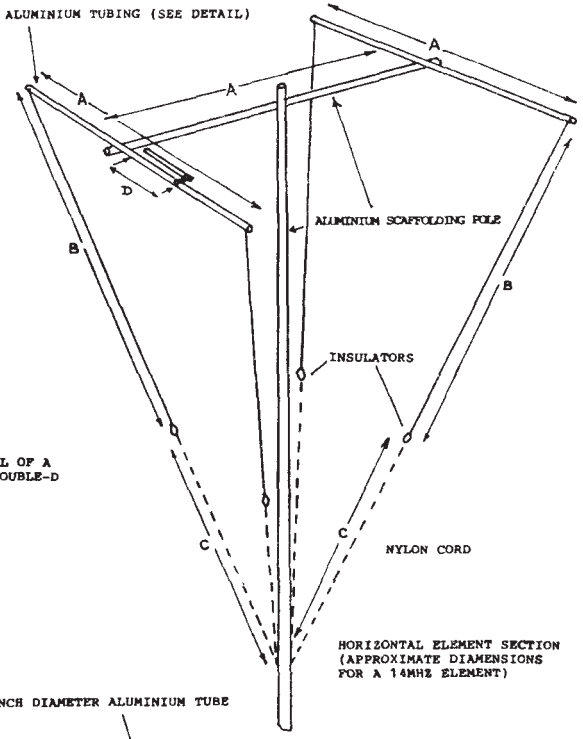
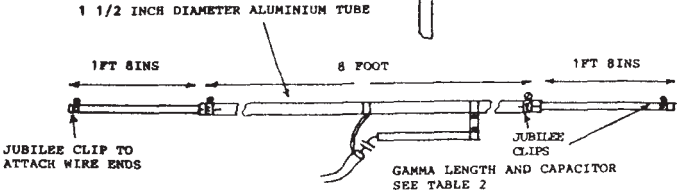


FIG 5
VHF MODEL OF A
SINGLE DOUBLE-D
ELEMENT

FIG 6 PERSPECTIVE
VIEW, SHOWING GENERAL
CONSTRUCTION AND
LETTER DIMENSIONS
SEE TABLE 2





80 METRE TRANSMITTER

By Gordon Pope G3ASV

Here is a circuit of a simple 80 metre transmitter which, with the value of R5 shown (optimum), has a TR3 drain current of 350mA, indicating 8.5 watts DC feed to the PA. The current into a 15 metre end-fed aerial, connected via the ATU shown, is approximately 300mA using a hot wire ammeter.

The Siliconix VMP1 was picked up for a £1 at last years Woburn Rally, but no doubt other VMOS devices, such as VN66AF, would be suitable. The device used is an enhancement type, i.e. it has to be biased on.

The lay out does not seem to be critical. Stages TR2 and TR3 were built on separate small veroboards, whilst TR1 is on a small PCB, but only because I already had it made up from a previous job!

TR3, in my transmitter a TO3 configuration, is mounted on a 16SWG Al heat sink bent into a U shape, dimensions being 50 x 35 with 35mm high sides. The crystal is available from Golledge Electronics. I shall probably convert TR1 into a VFO to cover all the CW part of the band.

The rig seems to give a very pure CW note, a tendency to parasites haveing been corrected by slipping a ferrite bead over TR3 drain lead.

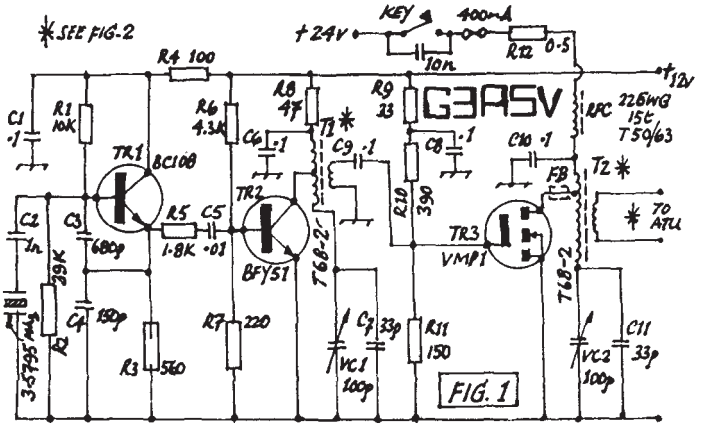


FIG. 1

(*FIG.1) T1, PRI. 60t, 28SWG, TAPPED UP 37t. ON T68-2 TOROID. SEC. IS 15t, 24SWG OVER PRIMARY.

T2, PRI. 60t, 28SWG, TAPPED 47t UP, ON T68-2 TOROID. SEC. IS 17t, 24SWG OVER PRIMARY.

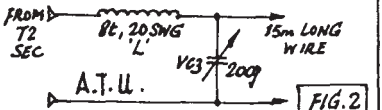


FIG.2

'L' WOUND ON 55mm. ϕ PLASTIC DRAIN PIPE, SPACED WIRE ϕ.

SEMI-BREAKIN T/R SWITCH

By Graham Ranft VK7ZO

Reprinted from Lo-Key

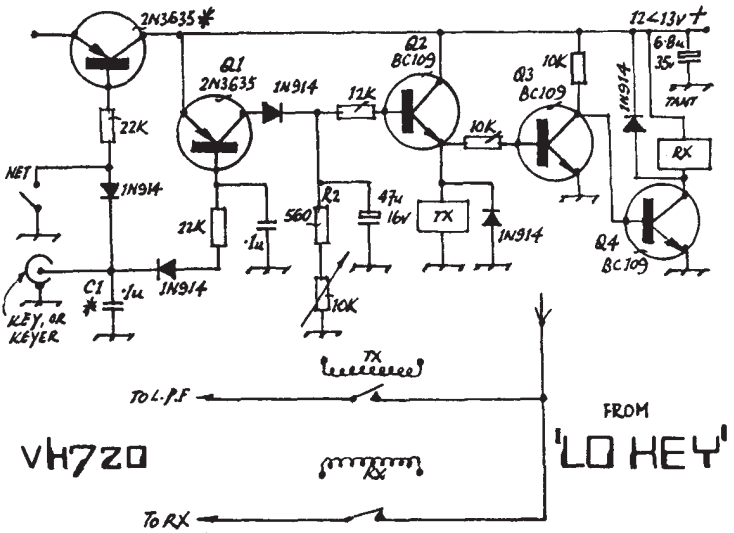
Having built the VK3XU FET 4, I wanted a quiet semi-breakin T/R switch giving reasonable attenuation of the signal to the RX. The circuit here is a combination of SSD and VK3XU (tu Drew). I have used the Archer reed relay No. 275-233, as I wanted to keep a nice DPDT relay for switching something more than 4 watts - using a steam roller to iron a hankie; I have not included the two IN914 diodes in the emitter leads of Q2, the relays seem to drop out cleanly and they both appear to operate together.

The Semi Breakin is a pleasure to use, no fiddly switching or "winding back" of the RF gain; the relay (RX) seems to give adequate attenuation of the TX o/p. The keying transistor will switch with either a hand key or o/p on my accukeyer, which puts out +5v no dash or dot, (i.e. goes to ground during dot/dash).

A further refinement could be to either connect another reed relay across RX and use it to either short out the RX i/p or activate a mute or gain reduction cct in the RX. The reed relays appear to need very little current to operate, I haven't measured it. I would imagine that resistance values are very flexible, the transistors are either on or off. For another idea for electronic T/R I refer to QST Feb 1986, page 24 - a 4 watt 24MHz QSK TX.

Notes

* in TX C1 install if not in TX All diodes IN914 R1 5 to 10K
R2 560 ohm to 1K Q1 2N3635 Q2 to Q4 NPN BC109 type



DO YOU REMEMBER the Radio Constructor magazine? Wanted old copies: Ian Wilks Ty Celyn,Axton,Llanasa,Holywell,Clwyd,CH8 9DH. (GW3FSW)

TRY THE INTERNATIONAL QRP SSB CALLING FREQUENCIES: 1950, 3690, 7090, (+7070) 14285, 21285 (EU) 21385 (USA), 28888 KHz ALL ± QRM.

THE QSK-1 - A ONE TRANSISTOR CW TRANSCEIVER

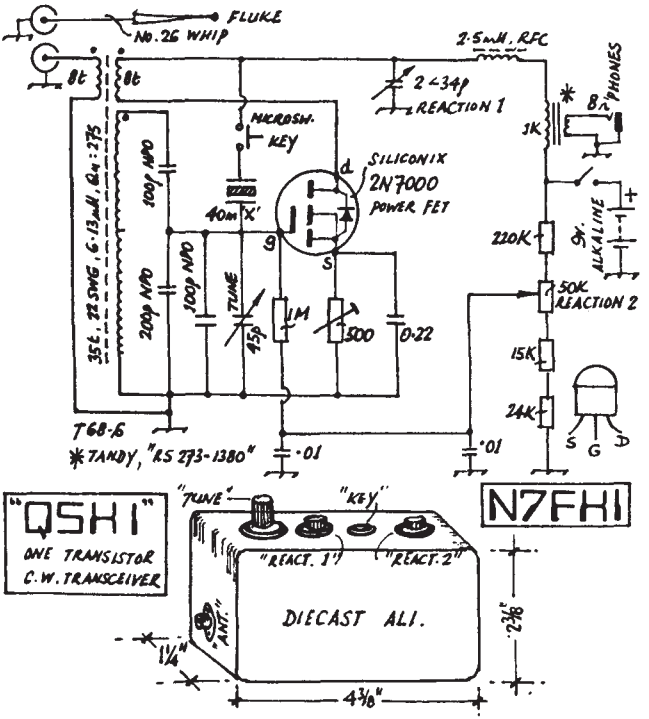
By Bob Culter N7FKI

This project is in now way practical! It was done to see what could be done with a single semi conductor. It was a lot of fun!

The Siliconix 2N7000 is a TO-92 power FET and has the following specification: 60v, 400mW, Id max = 0.2A, Vgs(th) = 0.8-3v (Id = lmA), gfs = 100mS (Id = 2oomA, Vds = 10v), Ciss = 60pF.

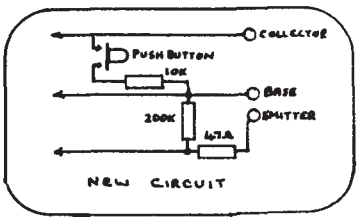
It is possible to set up the QSK-1 to super-regenerate and although this gives it sidetone capability it also transmits on more than one frequency, (very undesirable). Needed improvements are more power by keying a higher bias on the gate and also reflex regenerative.

The first QSO with the transceiver was on 22.2.86 at 0800 on 7113MHz with my XYL Terry, KA7VAF, whilst I was walking around the neighbourhood! RST was "very clear" both ways. The QSK-1 is really QSK, I heard Terry break in.



CORRECTION TO "ROCK'S TEST BOX" SPRAT 48.

The transistor tester section resistors should be as shown here.



THE TEN TEC CENTURY 22 - AN APPRAISAL AFTER THREE WEEKS

By Colin Turner G3VTT

Three weeks ago I obtained through a little deal locally, one of the new Ten Tec Century 22 transceivers, complete with its own inbuilt keyer and calibrator, both of which are available as extras. I thought perhaps some of you out there in "Spratland" may be thinking of buying one of these little rigs and you may benefit from my comments on using it over the last few weeks.

Firstly, I must say this is a critical report. All in all I like this radio, it feels right. Like all Ten Tec equipment it is designed with an excellent break-in keying system which feels good to operate, and it has the best sidetone I have ever heard. I think sidetone is most important in a keying system as I find with good sidetone my keying speed improves. One tip with the 22 is to turn the sidetone level right down so that your sidetone is the same audio level as the incoming signals. That way you seem to melt into the signals when you are keying, weird but true!

The receiver is certainly sensitive and on 80 metres at night there is a tendency to overload the front end. The usual 40 metre problems of cross modulation are apparent, but both these and the 80 metre overload are cured by turning back the RF gain control. A little cross modulation from 40 metres was noticed on the 30 metre band, and this too could be removed by backing off the RF gain control. I think this was a pretty fair trial of the receiver as I ran my large antenna system direct into the 22 without an ATU. As some of you know, I have Slopers for both 30 and 40 metres.

The keying waveform of the transmitter was not checked with a 'scope, but I can hear a slight trailing edge click, again not serious but this is a critical report. Naturally with over driving the keying waveform deteriorated, although the keying is entirely suitable for general use on our bands today.

The RF drive level control is a little non linear with the drop from 20 watts output to 2 watts being over a short quadrant of the control range. For "legal" QRP work I will have to use an in line power meter to monitor output RF levels. There is an inbuilt SWR and relative power meter which I like and an 'S' meter which seems accurate and is a rarity in a DC receiver.

The 22 is a double DC receiver, i.e. it does have an IF frequency of sorts, but no IF filtering. The audio filtering is good with the minimum frequency of the filter down to a few hundred Hertz, but why oh why did Ten Tec make this radio as a DC receiver? No doubt this was a function of price, but I feel an extra £50 or so would be well spent on making this a superhet product. I have no idea what the IF frequency is as there is no mention of it in the handbook, inherent with DC, this is still a useful receiver. I suppose this receiver is best described as a DC receiver with a crystal controlled convertor for each band.

The calibration is a useful feature although on one or two of the bands, such as 30 and 40 metres, the calibration signals are a little weak and the antenna has to be removed. The keyer is again a nice feature, although it does not have a dot dash memory and therefore you will have to improve your keying action on the paddle, no more sloppy sending. Both keyer and calibrator fit nicely into the top of the cabinet.

My final remarks to your are - get netted! To establish contact I suggest you tune your victim in zero beat and then swing the RIT off its centre notch position to give the required beat note. I usually have the AF filter set at maximum selectivity and peak the poor devil in with the RIT control.

A detail description of the Century 22 was given in Short Wave Magazine by G2HKU a few months ago. Prospective owners may like to read that too. All in all this is a good radio. I have yet to use the HW9 operationally, but at first glance the Century 22 seems a better rig, albeit at a higher price.

MORSUM MAGNIFICAT - A NEW MORSE MAG!

If you are a QRPer, you will almost certainly like Morse. If you like Morse, you will like MORSUM MAGNIFICAT, a magazine catering for all those having an interest in the traditions and practice of Morse telegraphy from its earliest concept to the present time.

Since 1983 it has been produced in Dutch by Rinus Hellemons PA0BFN, and Club member Dick Kraayveld PA3ALM. Now, Tony Smith G4FAI, has joined the editorial team as English language editor, and en English edition of Morsum Magnificat is available by post worldwide.

The Dutch edition already has articles from Morse enthusiasts in many countries and it is hoped that the English version will attract even more contributions, providing a truly international source of Morse interest, record and reference. Now with two members of the G-QRP-Club working on it we can be sure the natural affinity of QRP with Morse will not be overlooked!

The UK subscription is £6 a year (4 issues) postpaid. Cheques payable to MORSUM MAGNIFICAT should be sent to G4FAI, 1 Tash Place, London, N11 1PA. Overseas subscriptions, US $10 in banknotes please, to M. Hellemons PA0BFN, Holleweg 187, 4623 XD Bergen op Zoom, Holland. Issue No.2 is scheduled for Winter 1986. Subscriptions can date from No.1, Autumn 1986 if required. Please indicate your preference when subscribing.

OPERATING PROCEDURE

By George Dobbs G3RJV

Two frequent complaints are being made to me about two-way QRP operation on 80 metres, (around 3560).

1. Some stations seem to begin their QSOs with higher power, (say 10-15 watts) and then reduce power once the QSO has begun. Our awards are only valid for QSOs which are 100% QRP.

2. A number of Club members are appearing on the calling channel and working fellow members when using power levels above those applicable for our awards, (3 watts RF output or 5 watts DC input). Although I do not want to discourage members from being active on 80 metres, it can be a great disappointment to the genuine QRP stations, especially when QSLs arrive bearing power level entries above the limit.

ALSO NOTE: It is illegal within the terms of the UK Amateur Radio Licence to sign /QRP (e.g. G3RJV/QRP). It is permissable to sign as G3RJV (space) QRP.

The "BUE" Membership List is still available for £1.50 or US $3 including postage, (airmail). The list gives call sign, number and many christian names together with space for QSO/QSL record. Chris Page G4BUE, "Alamosa", The Paddocks, Upper Beeding, Steyning, West Sussex, BN4 3JW.

If anybody requires a wattmeter suitable for reading down to QRP levels and up to QRO levels then there will be one available shortly from Messrs Waters and Stanton of Hockley, Essex. They will be importing the Welz model SP220 which has three ranges of 2/20/200 watts and is suitable for operation between 1.8 and 200MHz. This in line wattmeter will retail for £67.95, and although it is a little pricey, it could be a useful tool for reading below 2 watts RF power. All enquiries to Waters and Stanton.

OK-G QRP TESTS - 31 JANUARY/1 FEBRUARY 1987

The suggested primary frequency for Top Band is 1900 KHz, with 1840 KHz and 1815 KHz as alternatives if there is QRM on 1900. For full details see the Autumn 1986 SPRAT.

WANTED: A copy of the manual for the MKII Suitcase Set and BandII coil pack for an MCR1. Also ANY information on new and old Spy Sets and the antennas used with them. Mike Michaels,W3TS,RD 1,Box 144,Lykens,PA 17048.

COMMUNICATION AND AWARD NEWS

By Gus Taylor G8PG, 37 Pickerill Rd, Greasby, Merseyside, L49 3ND.

NZ QRP CLUB?

Thanks to the efforts of our member Eugene ZL3BU, a group of QRP enthusiasts are now meeting regularly in Christchurch, attendances being as high as 30. Eugene has arranged to have a ONER kit sent out for demonstrations. We wish this new group well, and hope we may soon see a fully fledged New Zealand QRP Club in operation.

ONE QRP USE FOR A 100w PA?

During a recent QSO with one of our European members in which all communication was at the 3w level, his signal twice shot up from 559 to 599 as he asked stations with no receivers to QSY off our QSO. He was obviously switching on his QRO amplifier for thee requests and it worked! He was also the best BK operator I have met in a long time.

COMPUTERISED HF PROPOGATION FORECAST PROGRAMS

Any European member using or developing such programs please contact our Member Bob Brown NM7M, at 504 Channel View Drive, Anacortes, WA 98221, USA. Bob provides the propogation notes for the QRP ARCI Quarterly and is keen to find out the European situation. Incidentally Bob is the ex professor of physics at Cal. Tech.

IS YOUR TX/RX OFF-SET CORECTLY ADJUSTED?

Some recent QSOs have showm members using rigs where the difference between the transmit and receive frequencies has been as much as 3KHz. This means many missed QSOs with stations quite correctly answering on the transmit frequency. With any DC transceiver it is easy to check the off-set by monitoring on a second RX and ensuring that the VFO shift between send and receive is around 800Hz. Note that many umodified HW8s have far too much shift. In this instance the remedy is to replace C55 in the VFO circuit with a capacitor made from two short lengths of insulated wire twisted together, then twist or untwist the wires until the correct shift is obtained. (C55 was 3pF in the USA version, but 5pF was supplied in the kits made up in europe.)

AWARD NEWS (Apologies if I have missed anybody - over 100 dealt with during the last quarter!)

The Farnborough Flyer Makes it - 500 up for Bob!

Hearty congratulations to Bob G4JFN, on being the first Member to receive the 500 Members Worked endorsement to his Worked G-QRP CLUB Award. His performance is particularly impressive when one considers that his antennas are simple and fairly low. Bob used mixed modes, so there are still single-mode firsts to be achieved at the 500 Member level. Again congratulations Bob.

New QRP Master

Sincere congratulations to Frank G3YCC, one of our long term Members, who was admitted to the Worshipful Company of QRP Masters on 3rd October 1986.

Other Awards

Congratulations to the following on achieveing the Awards indicated.

QRP WAC G3YCC

QRP COUNTRIES 75 G3VXJ, G3YCC; 50 G3SXE, G4XYX; 25 G3IVJ, FD6HSI, G2HLU.

WORKED G-QRP-CLUB 500 G4JFN; 460 GM3OXX; 300 G3XJS; 180 GM3RKO; 160 OK1DKW; 100 G8QM, G4MQC, G3YCC, G2HLU, G4HZV; 80 GM4XQJ, GM4YLN, G4VGA; 60 G4RAW, G4PUU, GM4OSS, G4NVF, G4XVE; 40 G3FCK, FD6HSI, G4UGC; 20 G3IVJ, GM0BZF, G4ASL, G4RVN.

TWO-WAY QRP 20 G4MQC, G3YCC; 10 G3IVU, G4NBI, G3ZPN, G4XVE, GM3KPD, FD6HSI.

PROPOGATION NOTES - 10 METRES FROM SOUTHERN ENGLAND

By Phil Dykes G4XYX

These notes cover operation from Poole, Dorset during the period May to September 1986. Maximum power was 10w PEP on SSB and 2w on CW. The antenna was a 2 element quad at 20 feet. 49 countries were worked, including LU, PY, CX, CE, CN, C5, EA8, 6W, 4X, W4 and 7X.

Paths from South America, South Asia and Africa followed the 27 day solar rotation and appear unrelated to Es conditions. Paths to North America, North USSR snd North Asia seem to follow noticeably enhanced Es. They occurred most often in July with the east path in the early afternoon and the west path in the evening. Many of these longer paths open as the Es activity seems to be decreasing. They are not on the normal great circle path, but appear to be reflected from an area where Es were previously strongly reflecting SM signals. As the reflection appears to decrease good openings to UB, UA9, UL and even VU appear. Nomally the bearing for best path is north of the great circle path. I have not, as yet, found it to be to the south. Openings to the Levant (4X, ZC, OD etc.) are believed to be either multi-hop Es or Es at the UK end and F layer at the Levant end. Both I and G8PG favour the latter as an explanation. These openings often, but not always, appear at times when there is an Es opening to I/YU, but some appear at the times of what are believed to be late evening F layer openings to South America.

(NOTE: I would like to make two observations. Firstly, the above shows just how much the "dead" 28MHz band is really open, and how many questions can be posed by an ordinary amateur making observations on the band with simple equipment. Secondly, some readers may ask "Why all this fuss about 10?, we will be back there when the sunspots rise again! Well, Good Buddy, maybe you will - IF yu can find a few KHz free of intruders QSYing down from 27MHz. By using the band NOW some of us are helping to keep these jokers off it, but if more of us don't take a hand we may still lose out - G8PG.)

As a final note, this year the season for Es has gone on and on, with some excellent openings all over Europe during October.

***** HELP *** HELP *** HELP *** HELP *** HELP *** HELP *****

Whilst it is great to see the Club growing in size it brings an increased workload on those members who volunteer their services and give up their spare time to help the Club operate. As you can gather from the heading this is a plea for more help.

First we would like someone to take over the text typing for SPRAT from Chris. The minimum requirement is a good electric typewriter, as what you type is used as "camera ready" artwork by our printer, and the better it reproduces in SPRAT. Ideally a word processor should be used. Chris has been using the BBC computer with Wordwise and printing the text with a Juki 6100 daisy wheel printer. Although some of the dot matrix printers with NLQ (near letter quality) are pretty good, a daisy wheel printer is really essential. If you would like to help the Club please get in touch with George G3RJV. A perk we can offer in return for your help is that you get to read all the articles before they appear in SPRAT!!

Pat G4UYA, Cedric G4JBL and Chris G4BUE are the guys who are responsible for posting your SPRAT to you. They are looking for someone else to join them so the work can be split four ways instead of three. Ideally the volunteer should come from the Sussex area to overcome the logistic problem of collecting the SPRATS. The work involves putting the address labels (printed by Chris), and stamps onto the envelopes prior to SPRAT being printed, and then inserting SPRAT, together with any QSL cards, and posting them. If you would like to help give Chris G4BUE a ring or drop him a line and he can explain more of what is involved.

WANTED: Ten Tec Argonaut or Argosy. Tel Bob 0204 657410 evenings.

VHF NEWS

By John Beech G8SEQ

14 Hollow Crescent, Radford, Coventry, CV6 1NT. Tel: 0203-598186

First my apologies for missing the last issue of SPRAT - my holiday arrangements got in the way of the deadlines. So here is what you should have got last issue.

However, I've received some interesting reports on unusual propogation modes and antennas. Dave, G0DJA, who is situated in Birmingham, has managed to work stations as far away as Bolton and Harrogate using 2m CW, running about 3w into a rhombic or long wire via an ATU. Dave's principle reason for using these sorts of antenna has been because he has not been allowed to put up beams at his parent's house. So if you are in a similar position, why not try VHF with a wire antenna? Come to think of it, I might just do that myself until we've moved house!

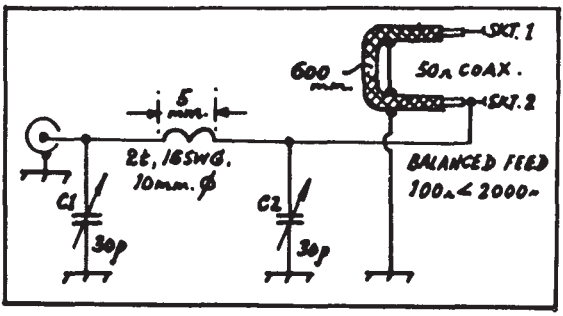
Another member, whose call sign escapes me, (I'm in Ireland writing this and I think the Guiness has gone to my brain!), wrote to say he had worked the Wireless Museum on the Isle of Wight from his QTH on the other side of the island with rythmic QSB on the signals due to the ship he was inadvertently using as a reflector swaying at anchor. I've heard of people using scheduled aircraft flights for their skeds, but not shipping!

Mike, ZL1ABS, writes from New Zealand with news of his VHF and UHF activities. He says E layer 6m communication with VK is possible every summer and 2m openings have occurred twice in ten years. He has also sent along some information for a very good 2m or 70cms pre-amp. He is selling the PCBs to raise funds for the New Zealand end of the G-QRP-CLUB. The cost of the PCB will be 85p, including postage. For the same postage it would be possible for me to include the parts for a kit of parts. I would expect the total cost to be of the order of £4 or £5, so if any of you are interested, write or telephone me.

73 John

TWO METRE ATU

By David Ackrill G0DJA



For suitable antennas, I suggest you consult the standard text books on HF rhombics, vee beams, etc, and scale them down for VHF

AGCW-DL Straight Key Party

Held between 1600 and 1900z on 1st February 1987, CW with a straight key only between 3510 and 3560. Class A is for 10 watts input or 5 watts output and exchange RST, serial number, class, name and age, i.e. 579001/A/CHRIS/21. Call "CQ HTP". Score 9 points for QSOs with Class A stations, 7 for B (50 watts) and 5 for C (150 watts). Logs by 28th February to Friedrich Fabri DF1OY, Vor dem Steintor 3, D-3017 Pattensen, West Germany.

SSB NEWS

By Ian Keyser G3ROO

"Rosemount", Church Whitfield, Dover, Kent, CT16 3HZ. Tel: 0304 821588

SPRAT comes out and three letters on the first morning! All these concerning kite antennas....seems as if there is interest here so must try and weedle out all available information.

Dave G3OEP writes to tell of his experiments using an RAF kite which belonged to the late G6KZ. Results on Top Band were outstanding. The kite is similar in design to the one marketed by Brookite Ltd, however Dave does not mention the address. Apparently kites were used by the Norfolk Raynet Group on Top Band, but they were given up due to instability. It is fairly obvious to both Dave and myself that this was due to poor design selection as all I can say is that they can be extremely stable and useful.

Gus G8PG writes to warn us that the height restriction is 200ft and special permission must be obtained from the CAA to fly above this. I can only echo this warning, as when giving a demonstration of my box kite to the Dover ARS I was flying at 700ft from Deal beach and a helicopter flew along the beach and under my kite line....I got worried but did not get a visit! Gus also tells of the US weather bureau who used to used kites for weather recording with kites used to altitudes of 25,000ft.....um, fancy your Top Band dipole up there!!

Dave, G3LSL is preparing an article on kite flying for Rad Com, I hope that he sends a similar article for SPRAT. Dave has been very active in kite flying and also admits to flying above the 60 metre but no flying within 5Kms of an aerodrome. Common sence rules indicate avoiding power lines, perfectly clear ground view of the total flying area, and never fly when there is any chance of lightning. It is also important to use a DC grounded ATU system to reduce the chance of static build up on the wire.

VK Land Another piece of information worth mentioning here concerns the CW Operators QRP Club in VK land. Len VK5ZF contacted us to set up correspondence between the two clubs. I have replied asking for information about SSB membership and asking for some QRO skeds to get information. If these materialise I will pass them on in Sprat 50. Also as the majority of SSB QRPers are also keen CW operators, (the reciprocal is not practiced by the junior faction in the club, the CW operators!), I include their CW frequencies so that you can make contact with them:- 1815, 3530, 7025, 14050, 21130, 28125. Worth having a go, especially the way the bands have been in the last few weeks (late October).

BYLARA We have had a letter from Dave G0DJA about reported QRM with BYLARA on 3.688. Apparantly there have been problems with our membership telling them to "clear off the QRP frequency". Not the best way to put it whoever did it, as we have no claim on the frequency at all. However, I think that the sentiments will be accepted ON BOTH SIDES that as we have been using this frequency for the last 10 years to my knowledge, we, and being very weak stations, deserve a little assistance. Correspondence was entered into with BYLRA about the problem and they decided to move from 3690 to 3688!! Perhaps the YLs concerned do not understand that an LSB signal on 3790 has sidebands down to 3687 minimum! It must be realised that our QRP signals cannot be heard all over the country, whereas their high power signals can, and they may not be aware of our existence on the frequency at first.... PLEASE DO NOT STIR IT UP, it will only increase animosity and make my job more difficult.

That's all the news for now, must get this in the post to catch George's deadline.

73's to all, 'ROO

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

I have to start this column with two apologies. First for not attending the RSGB HF Convention at the end of September in Oxford. I am afraid that the Club administration duties, together with other commitments, meant time was just not available.

The second apology is made wearing my ARCI hat. Many of you are also members of ARCI and will have been concerned about the non receipt of QRP Quarterly. Due to some changes in Officers and administration procedures the July and October editions of The Quarterly have been combined and the December edition should be published as usual. It is anticipated that that edition will explain the problems and that your subs will be extended to make up. If the UK members of ARCI who have not yet received the April edition of The Quarterly let me know, I will send them a copy.

Since getting his licence in May, G0FAH has made 650 QSOs including just one on SSB! Bill's comments are interesting and I think worth repeating in full, especially for the benefit of the newcomer to QRP. "(1) CW operating is great fun and very enjoyable. (2) There are some very nice people about on the key, very helpful when I started, didn't mind coming down to my "test" speed. (3) The YLs can keep us on our toes with their good sending, watch out for Sue G4WGY!! (4) Ham radio is full of surprises, you never know what the next QSO will bring. Only a couple of days ago I worked my first JA with 2 watts using an Argo, and then worked a second one an hour later. (5) QRP CW is not supposed to be the best way for the newcomer to start. I don't agree, but you do learn fast, hi!"

The Summer conditions seems to have been met with a varied response from members ranging from "terrific" from W6SKQ who made 145 QSOs in the ARCI Fall QRP Contest to "poor" from FE6FZL, despite John noticing an increase in QRP activity from USSR and to "lousy" from G0EBQ, although Nigel was struggling with 600mW from his OXO on 20m with an indoor antenna. I guess it depended when you were on the air as their have been some superb openings for DX as those who were QRV during the CQ CW Contest at the end of November will testify. 40 and 80 metres have also had some good openings. K4KJP was also QRV in the ARCI Contest and said GM3OXX was the only European QRP station he heard.

G4XYX and G4JFN were QRV as GB4LP at the Wimborne Hamfest in Dorset in August. Phil and Bob showed over 400 visitors the station and they were very impressed by the constant stream of QRP QSOs. Look out for G3HKQ in Australia between January and July 1987 as Vic has applied for a reciprocal licence. EI8CE is moving to a new QTH which has 3/4 of an acre. Aidan intends experimenting with large antennas. Iain, ZL2BJC says there is good interest in QRP in his area with several "Chelmsford" rigs designed by ZL2BCW in use. GM3RKO and GM4HBG manned a Club stand at the GM Convention which resulted in lots of new members. Nor and Iain even made up their own Oner kits to sell and raised over £200 for the Club funds great going lads. G3YCC and G3MPW manned a stand at the Hornsea Rally and said there was lots of interest in QRP.

The Howes range of kits are proving to be very very popular, with G0FJN, G4ABV, G0BHI and G0FKX all commenting favourably on them. Paul, G0BHI thanks Tom G4INM for his very helpful advice in getting rid of a chirp on

his TX, and David G0FKX mentions the SSB QRM from the EA fishing boats on 3560 at his Cornwall QTH. G4EHU is QRV on RTTY with a 444 teleprinter and BARTG ST5MC TU. Bill is a trained PO RTTY op! G3YCC has erected a G5RV in plce of his trap dipole and Frank is using it for RTTY with an ST5 and Dragon computer. VE3MMQ is building an interface to receive CW with his Vic 20, and G4RMC's latest project is a Spectrum Communications 2m convertor. David says it's amazing what you can do with only half a watt. G3ICH has dismantled his G3YCC TCVR to make changes and additions to it and Frank GI4NKB is building a DSB TX for 20m but is having problems with a home made double balanced mixer.

DL1HCU is using solar power with his DC80 and it's giving excellent results. He is going to install a larger solar panel which will eventually power a Micron, DC80, counter etc., and even a TV/radio for the XYL! Udo is interested in contacting other members interested in solar power, (Ellerbeker Weg 107, D-2084 Nellingendes, West Germany). G4PPG bought an unfinished PW7 at the Club NEC stand and has built a fine 20m TCVR from it. Jim is looking for a secondhand Argo or Argosy to buy. Bob, G4JFN mentions that the first three places in the Farnborough Club's construction contest were won by club members and G3XJS was surprised to have QSOs with N4TO and NL7G on 80m in the middle of the day!! Trouble is they were both working /G0 from my QTH whilst in England for the F.O.C. Dinner! N4TO is a Club member and Vic was using my TS930 at the 5w level so that should be a good QSO for Peter's next endorsement. Peter was using his new G3OGQ TCVR which sounded very good. The previous day he had called CQ on 14160 with it and was answered by a W2. Peter wants to buy an HF beam, TH2 or similar and can be reached on 0494 712344.

A break with tradition, I am including a photograph of one of our members (3693) in this column. Ed Burr is 12 years old and although he has passed the RAE and can operate another persons station, he cannot obtain his own call sign until he is 14. Some of our overseas members will find this difficult to understand, as it illustrates some of the old fashioned backward thinking and outdated regulations we have to abide by in the UK. Back down from my soap box!, Ed operates his Dad's station using the call G4TEU, and wonders if he is our youngest member?

DJ1ZB was QRV in FD in June with his TCA 440 RX and 2w TX making 163 QSOs. Ha-Jo is making simple 40m TXs with TTLs. Using a typical crystal oscillator arrangement around a 7400 up to 1w output can be obtained from a 7407 or 2w from 2 parallel 75453 with 12v. He is designing a VFO exciter around a CA3046 transistor array. G0BYA is building the PW7 and Stan says he would like to see a SPRAT article about test gear - come on someone! G3NNK has built the Micron and is very pleased with it. Alf's antennas are a problem as he is on q new estate where masts are banned. He is using a 90ft wire along the plastic guttering and down the garden onto the back fence and has given him a 559 from DL on 40m. ON6WJ has replaced the 20w PA in his FT7 with a Class C 2w PA for QRP. Jos works /P from the beach with kite antennas and often has 150m of wire in the sky. One QSO with a G took over an hour to complete as the kite fell down three times! DF5OQ is using 2w on from a FT707 and PD0MAM is using a Micron and 2m TVTR for VHF.

So you think you have a bad QTH? G0FIU has just erected a vertical for HF work in his 12ft square garden and GM4HQF is using a Century 22 with HF dipoles hung onto his neighbours balcony as he is 17 storeys up. At least it gives Daves height as he worked Danny K3TKS in the RSGB 21MHz CW Contest and also VQ9 and 9J2. WA4NBE says he seems to have a pipeline into the UK on 20m as he was working G stations daily in the middle of October, but no members. W4OEL has no complaints about conditions. Since September last year he has worked 100 DXCC on 15 and 20m with a TA33 at 8m.
Several stories of holiday operation are interesting. G4PUU used his PW7 whilst in Cornwall whilst GM4XQJ was plagued by QRM whilst in EA6. Brian made 26 QSOs but no G. In the Spring of 1987 he will be /P from the Boness Railway Preservation Soc. HQ working CW with a 3 mile antenna made up from the trackside telephone lines!! ON5AG was holidaying in France and made 22 QSOs around Europe with an Argo and indoor G Whip. Finally G3PDL and G4WZV were grateful for the assistance from GM4TXP when their exhaust broke while touring in GM. Alan talked them in on 2m and took the families into town for coffee while the car was fixed.

EA3FHC and EA3ERT have placed an advert in the Spanish edition of CQ Mag for the Club. Mike mentions 10m being open to the USA in Oct/Nov, 20 USA stations being worked with 1w, how we envy you in the UK being further south! G3SEP mentions 10m and how he worked Mike from A4XZG in March. Dave says he also worked other EA stations, although he was QRO. G3DOP has a new antenna called a Hula Hoop! John is working on a 1154 aircraft TX used in the famous Lancaster and Halifax bombers during WW II. SM4MNT is very pleased with the HW9. Ingo also uses an IC745 at 2w and only needs OC and SA for a 3w WAC with a random 27m wire antenna. G3OEP has imported and constructed the American RF Kit Company's T5 TX and says it is well designed and good value for money. Dave worked ZL4AW on 40m, but had to use 10w. He is also working /M with a Century 22 and whip. G3SVW is using a single transistor VFO at 8mw input, tapped straight onto the collector! Ron says it is crude but works, with 2 miles as the best DX!! Ron says he is interested in very low power and distances covered, what we called "milliwatting" in the last sun spot peak. Ron is also interested in special detection systems for signals embedded in noise and the assistance that computers can make towards that objective. FD1JDG is using a homebrew TCVR at 500mW on 40m with crossed dipoles.

G0FUW has progressed from G1KVY but is not deserting VHF. Steve says he is willing to give CW practice on 2m in the Gosport area and can be reached on 527694. G3JNB said the BRATS video of the ONER construction made at NEC was shown at the Thames Valley Club's QRP night and is an "excellent way to rally teach how to make your own". Victor won the G2NG Trophy for the Club's 1986 QRP TX construction contest. He built a Oner for 80, 40 and 20m and best DX with it was UZ6AYG by the Black Sea on 20m with 750mW.

Finally as a result of several requests I will describe how the Club's QSL Bureau works. If you send QSL cards, for other members only, to my wife Pam they will be incuded with the SPRAT mailings. The recipients Club number should be written on the top right hand corner and please do not send envelopes, as cards will only be sent out with SPRAT. Cards should reach Pam by the begining of the month of publication to be sure of being included. Just a reminder to please include your membership number when sending your subs to me. If you enjoy this column it cannot exist without you. Now you have to send your subs to me you really don't have an excuse to give me material for the column. Waiting to hear from you.... have a good Christmas and New Year and see you in the Winter Sports.

73, Chris

AGCW-DL Winter QRP Contest

Held between 1500z 17 January and 1500z 18 January 1987 on CW only on 160 to 10 metres. Class A is below 3.5 watts input or 2 watts output and exchange RST, QSO number and input i.e. 579001/1. Scoring is 1 point for QSO own country, 2 for own continent and 3 for DX. Multiplier is 1 for each country and 1 for each DX QSO. Total score is QSO points multiplied by multiplier for each band and band scores added together. Logs within 6 weeks to S. Hari DK9FN, Spessartstrasse 80, D-6453 Seligenstadt, West Germany.