SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED·TO·LOW·POWER·COMMUNICATION

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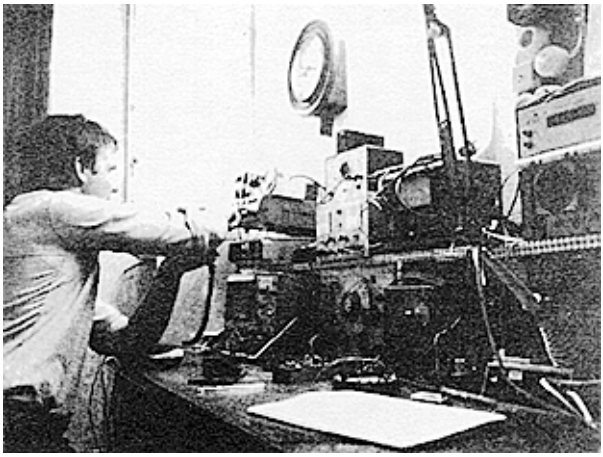


ON6WJ - Warnier Jos

" 1 xRO FT7 plus plenty of Homebrewed QRP Projects...plus lots of enthusiasm."

CONTENTS: DC77 Receiver. Sled Kite. A.F. Filter Layout. Santista TX. Loaded Whips. Mixer Circuits. D/D Beam. Snowshoe Transceiver. QRP ATU. RSGB Convention. Club Badge. Toroid Offer. Contest-Award-Members News. G QRP Club Circuit Handbook

Rev. George Dobbs [G3RJV]
17 Aspen Drive, Chelmsley Wood,
Birmingham. B37 7QX [021-770-5918]

Dear Member,

One of the pleasures of my work with the club has been seeing the increase in interest in QRP over the last few years. I now get QRP newsletters from clubs all over the world and handle an average of 40 letters each week from members and others interested in our branch of the hobby. I was especially pleased when, a short time ago, the R.S.G.B. asked if the club would provide the two stations for the H.F. Convention they plan for this June. (for further details see later in this issue) I am especially keen to see that as many members as possible attend the Convention. Not only will it be an interesting event in its own right, but a chance for the club to 'fly the flag' and for members to meet each other. Already we have myself, G3DNF, G4BUE, GM3OXX, G3ROO, G3VTT, G4DVW and perhaps G8PG lined up to attend. We all plan to have a good day, I hope you will be able to join us.

I have also been pleased to see that the club has been making itself known on the new 10.1MHz band. What a good QRP band this seems to be. I hope to include a transverter circuit for this band in the next issue. Have you got a 30m band circuit to share with us?

hpe cu qrp 73 fer nw,

George G3RJV

Subscriptions

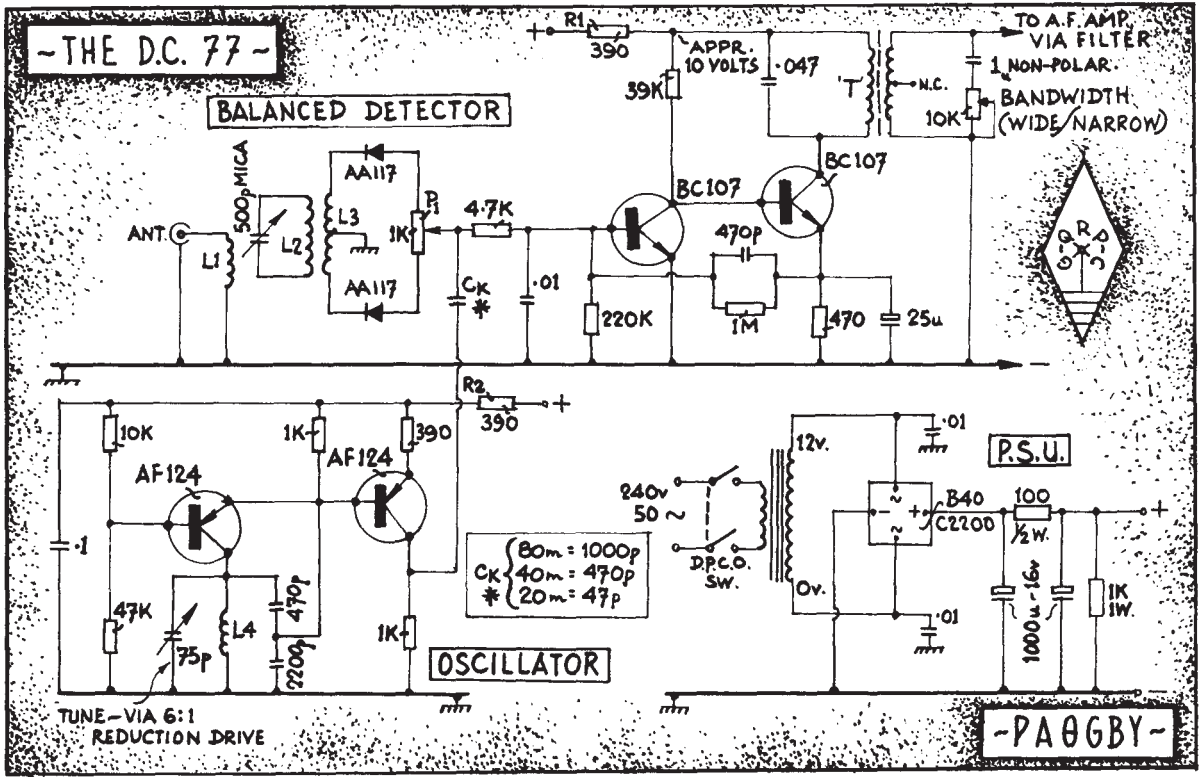
Renewal (Rates now £3.50 or $9 US) to Alan Lake, G4DVW, 7 Middleton Cl. Nuthall, Nottingham. NG16 1BX. PLEASE QUOTE MEMBERSHIP NUMBER. Cheques to 'G QRP CLUB'. European members may use Giro Cheques. A reminder if automatically stamped onto SPRAT, fi you have already paid please ignore the stamp.

Due 91-120, 201-222, 272-292, 393-418, 522-572, 772-833, 1082-1157

Overdue 0-90, 178-200, 254-270, 351-392, 466-524, 619-771, 1001-1081

WE STILL HAVE SOME I.R.C.S for sale to members. They cost 30p from the Post Office. Available from G3RJV at 5 for £1 plus a SAE.

SPRAT: The journal of the G-QRP-CLUB
Editor: Rev. G.C.Dobbs G3RJV
Artwork: A.W. McNeill G3FCK
Text-type: C.J. Page G4BUE


~THE D.C. 77~
BALANCED DETECTOR
R1
390
APPR. 10 VOLTS
39K
·047
T
TO A.F. AMP. VIA FILTER
1 NON-POLAR
N.C.
10K
BANDWIDTH (WIDE/NARROW)
BC107
BC107
470p
1M
470
25u
500p MICA
ANT.
L1
L2
L3
AA117
AA117
P1
1K
4·7K
CK *
·01
220K
R
9·0
3·0
R2
390
10K
1K
390
AF124
AF124
·1
47K
75p
L4
470p
220p
1K
OSCILLATOR
CK * 80m = 1000p
40m = 470p
20m = 47p
240v 50 ~
D.P.C.O. SW.
12v.
0v.
·01
·01
P.S.U.
B40 C2200
100 ½W.
1000u-16v
1K 1W.
TUNE—VIA 6:1 REDUCTION DRIVE
~PA0GBY~

The DC-77

From The Benelux QRP Magazine No. 13 by PAØGBY, translated by G3VTT.

The circuit shown below is of a direct conversion receiver for the 80, 40 or 20 metre bands.

The sensitivity and AM breakthrough levels are good, in fact much better than the HW7 transceiver. By careful adjustment of the pot P1, which can vary from band to band, it is possible to remove AM breakthrough on 40 metres!

The winding ratio of L1, L2 and L3 are respectively 1:6:2 x 1. Therefore on 80m L2 is 40 turns, L1 6 or 7 turns and L3 2 x 6 or 7 turns. L1 is wound on the 'cold' side of L2 and L3 is wound over the middle of L2.

The capacitor is parallel with L2 is about 500pF and is a mica insulated type, such as was used in the old reaction feedback receivers. (Dutch readers can get these from Watford Electronics or use an alternative type, maybe from an old Hong Kong made radio).

The tuned circuit around L4 is tuned to the operating frequency. For bandspreading connect a small capacitor in series or parallel by experiment. A slow motion drive of 6 to 1 is recommended for the tuning capacitor across L4. The transformer 'T' in the diagram is used for impedance matching to the following AF amplifier which is not shown in the diagram. The power supply does not need to be stabilised, although it will help general stability if a firm strong method of construction is used. PAØGBY used vero board. The 0.01uF capacitors on the secondary of the mains transformer are to stop modulation hum. Sometimes only one is needed, but two may be tried by experiment. If by any chance the mains supply should fail, a 9 volt battery can be used with the removal of R1 and R2.

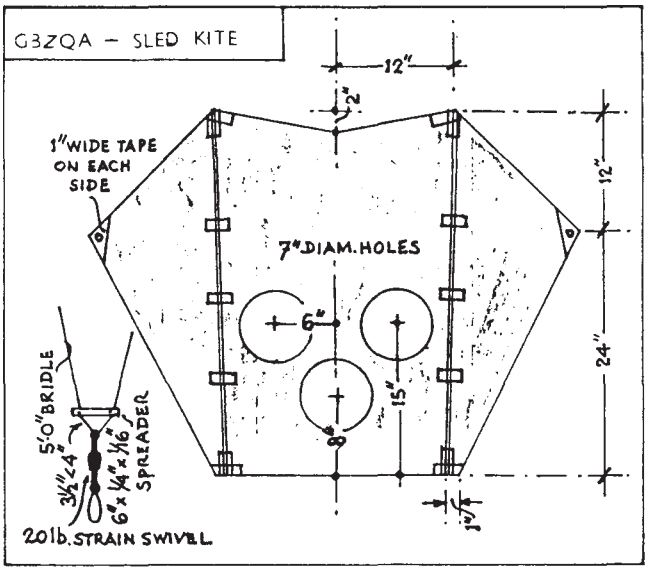
Results

Very good DX on the HF bands, also on 80 metres, Ws and VEs and ZS, all with a simple wire antenna. The selectivity without a filter is good, with a filter it is of course much better.

The 128 SET For QRP by Martin G4LDG & Dave G4EZF

Martin writes "The 128 set is a combination of separate TX and RX and tunes from just below 2MHz to just over 8MHz on receive, whilst the transmitter is crystal controlled on one frequency on CW. The supply voltages are 135 volts and 1.5 volt as the set is valved. The set was purchased from A.H. Supplies (who advertise in Practical Wireless), and came with the following items :- haversack, morse key, head phones, reel of antenna wire, ground stake and complete instructions, service data plugs and sockets. The receiver is a superhet and the transmitter a two stage device consisting of a crystal oscillator and PA. Five valves used and the PA covers a wide range of impedances matching almost any antenna. The output power is about one watt. The drawbacks of the set are the voltage requirements, the receiver is switched off on transmit and no sidetone. My own conclusions after using the set are that it's good fun to operate and it can only be described as "real radio". At £27 I think it is a cheap way of getting on the air".

Dave writes "This set was used by our air borne troops around 1950-65 and makes a fine two watt rig on 40 and 80 metres CW when controlled by 10X or FT243 crystals. The receiver unit uses five small B7G battery valves and tunes 2 to 4 and 4 to 8 MHz in two switched bands. The transmitter unit has two valves, oscillator and PA with a very effective inbuilt ATU for varying lengths of random wire, plus a neat one inch aerial tuning meter which allows you to tune right on the nose with one watt RF output. A modification to wire the DK96 heaters permanently to the LT supply prevents receiver drift after transmitting. I use the station with a 20 metre length of indoor wire on the second floor of my Council flat and have had many QRP/QRP QSOs around the U.K. on 7MHz. I would be pleased to swop ideas with other members using the 128 Set. I find the mystery of using a set of such origins and interest make it all worthwhile, and would also like to hear from members who used the Set in the Services.



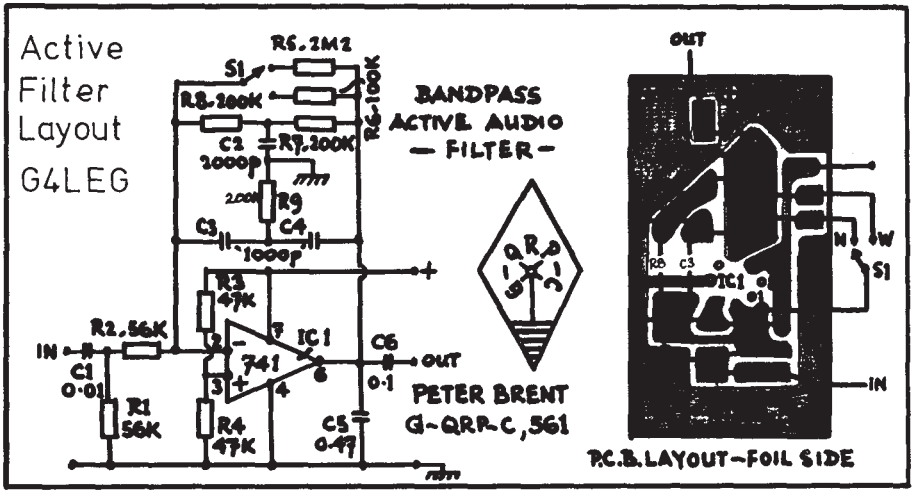
The Sled Kite

Roy Rowntree
G3ZQA

I find this a more reliable sky hook than The Delta kite I was using last year. It is made far easier than The Delta and will cope with a much wider range of wind speeds. It goes up from the hand and when the required length of line has been paid out, can be pegged down and does not require any further attention.

This form of kite is is known as a Sked Kite and has many variations, and some are more reliable than others. The design enclosed has been used as a pattern and about 60 have been made for the local children - it flies without any complications and at a high angle. It just goes up and can be quite a handful to get down in a fresh wind.

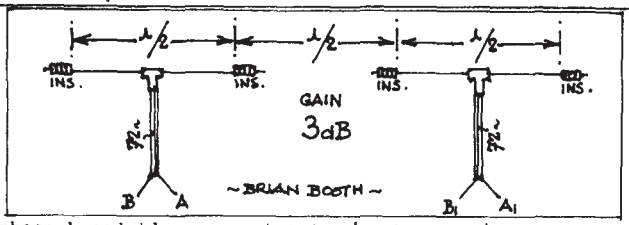
The sail is cut from bin liner and re-inforced with 1 inch wide adhesive plastic tape each side and eyeletted at attachment points (many bin liners are less than 36 inches deep). The sticks are about 3/16 inch square and fixed with short strips of 1 inch plastic adhesive tape each 9 inches and an additional strip of at each end over the sticks and stuck to each side of the sail. The bottom end of the stick is fixed 1 inch in from the corner. The bridle 5 feet legs into 6 x ¼ x 1/16 inches spreader and 20 pound breaking strain swivel (obtainable from fishing tackle shops). The bridle is made from 20 pound braided nylon fishing line



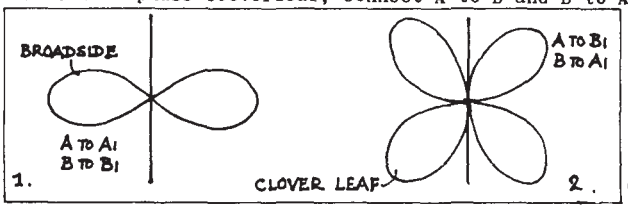
To use circuit layout with G3IVF filter:

1) Reduce number of bandwidths to two, shown as wide (W) and narrow (N) and select with SPDT switch.
2) Ignore reference to R1 (used with different circuit).
3) Layout shown is for TO-5 style 741. Space is sufficient for DIP 8 pin package.

Two Dipole Collinear. Brian Booth G3SYC



1. In phase broadside, connect A to A' and B to B'
2. Out of phase cloverleaf, connect A to B' and B to A'



The gain is about 3dBs

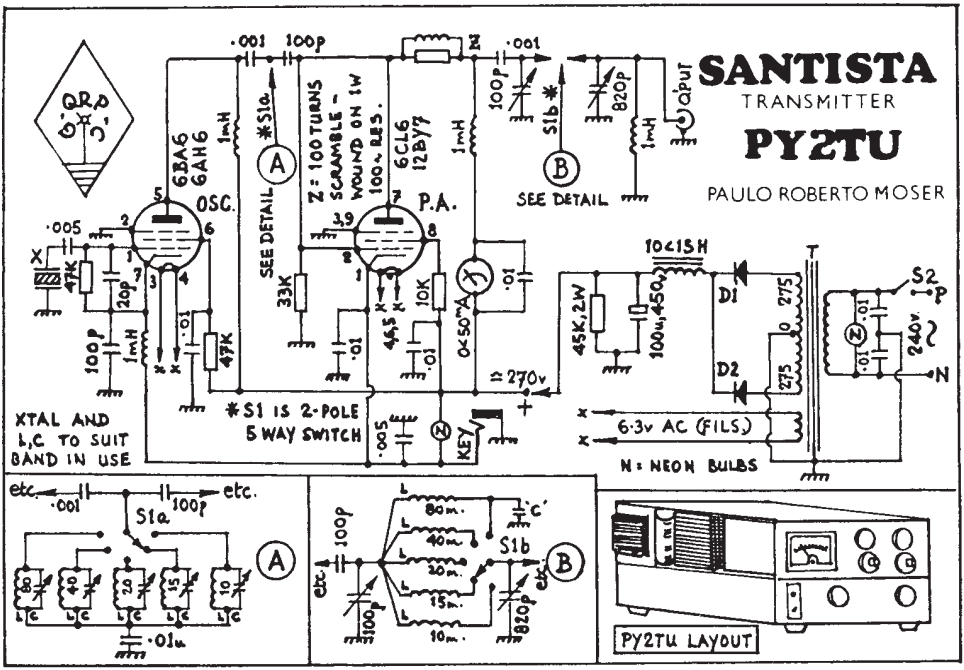
One must use an ATU connected to the junction of the feeders, to take care of the 36 ohm feed.

It is a very good antenna and should suit the single band man.

QRP CALLING CHANNEL CRYSTALS

Crystals for the QRP calling frequencies can still be obtained (3560, 7030, 14060, 21060 and 28060) etched for The Club in HC25U bases from P.R. GOLLEDGE ELECTRONICS, MERRIOTT, SOMERSET, TA16 5NS. *Cash with order for the special Club price of £3.00 including VAT and postage.*

Handicapped Amateur requests price for a VFO for HW8, and could anyone help with an ATU (Building it on my behalf) State price to: E.O'Reilly, 66 Sandown Park, Ballymena, Co. Antrim. BT43 6LE.



In May 1980 I assembled a QRP rig. Plug in coils (80 - 10), only two tubes: I am using a 6BA6 as an oscillator and a 6CL6 as a power amplifier. I have named this QRP "Santista" (which means "from Santos", a large coast city, 80KMs from Sao Paulo, Brazil).

Using a few crystals (7002, 7009 and 7014 KHz) I have worked 38 countries.

To compare Santista and my Argonaut I put a wattmeter in the line and found the following power output :-

	80m	40m	20m	15m	10m
Santista	4	5	3	2	750mW
Argonaut	3	4	3	2	2

(power in watts)

High Rise Vertical G4MEW

The fact that you live in an "impossible" location does not mean that you cannot have success with QRP. I use my Argo from a sixth floor flat in a tower block where outdoor antennas are officially forbidden. When first trying QRP from this location various indoor antennas were experimented with, but gave poor results. Attention was then turned to the balcony of the flat, and a vertical antenna system was erected on it. This consists of a G Whip mobile whip worked against a ground plane consisting of two metal shelves carefully bonded together (the ground plane area is approximately 2 square metres). The G Whip is fed via a KW E-ZEE Match antenna coupler. In the four weeks that this system has been in operation 27 different countries have been worked, using a mixture of cw and ssb. The best ssb DX contact so far was with ZS5SP, and the best two-way QRP contact was with SP, using cw. To further improve results it is hoped to add two additional metal shelves to the ground plane, thus doubling its effective area. It is hoped that this short note will encourage other members living in difficult locations - after all, the word "impossible" does not exist in the vocabulary of the dedicated QRP operator!

Feeding The Whip Chas Bryant GW3SB
Loaded whips for H.F /P operation

The use of a loaded whip aerial for HF portable operation is often convenient and for mobile operation it is almost universal. Such a whip is normally constructed to present a low impedance at its base where it is fed by means of co-axial cable. This arrangement has a number of disadvantages, including :-

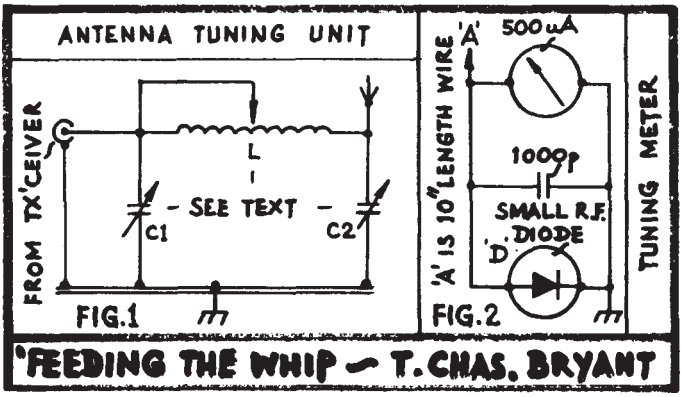
1. A good earth connection of the use of radials is desirable.
2. The very low impedance can cause matching problems.
3. Normally, only one band operation is possible without changing the loading coil
4. The aerial has a very small band width which restricts the choice of usable frequency within the band.
5. The use of a capacitance hat* will further reduce the bandwidth of the aerial

By constructing the whip to present a high impedance at its base and tuning by means of a pi-coupler between the transceiver and the base of the aerial, the following advantages occur :-

1. Neither an earth connection or the use of radials is necessary.
2. There are no matching problems.
3. Multi band operation is possible.
4. Instead of changing the physical length of the aerial, tuning is carried out at the pi-coupler and the whole of an amateur band can be covered without the need for any physical adjustment to the length of the aerial.
5. A capacitance hat* does not reduce the band width.
6. Since physical length is not so important for tuning, it is possible to increase the length of the whip (by one or two metres) under static conditions, i.e. vehicle not in motion) with greatly improved results.

Any whip aerial, home or commercially made, which was intended for low impedance feed on 3.5MHz will work on 7, 14, 21 and 28MHz with high impedance feed. The cheapest arrangement is to wrap 66 feet of wire around a garden cane and add the longest whip that will remain upright - if possible with a hat. A more sophisticated arrangement is to use a one inch diamter plastic water pipe, strengthened with a wooden dowel. Small staples may be driven in to hold the wire in place. Two-thirds of the wire should be close wound and the top one third should be spaced the equivalent of about a turn. This can be done quite simply by inter-winding plastic clothes line between the turns. The top may be a telescopic whip or jointed ex-wartime rod aerials (if still available). The author uses a sponge sandwich baking tin (stolen from the kitchen) for a capacitance hat. Lengths are unimportant but the higher the better. The author uses about two feet of whip for mobile operation and about nine feet for portable operation.

A suitable ATU is shown in Fig. 1, the values of the components will vary with different installations, but for 7MHz and above L might consist of 25 turns on a 1½ inch diamter former; C1 500pF and C2 100pF. For use on 3.5MHz it would

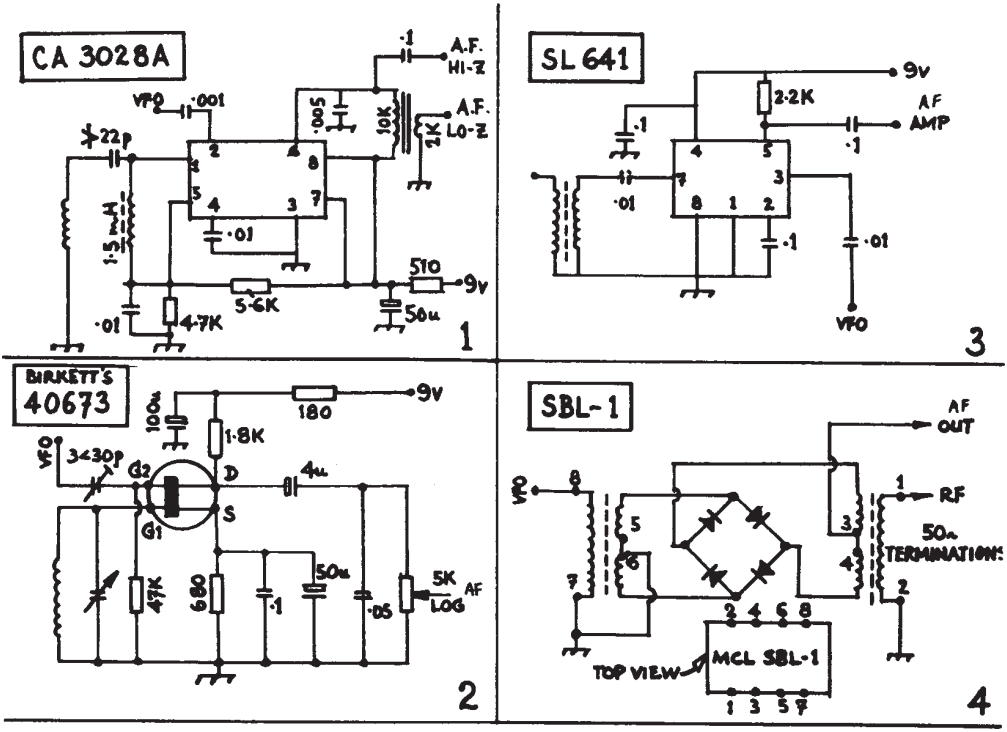


probably be necessary to double these values. Both the position of the tap on L and the tuning of C2 are very critical. Until an optimum position for the tap has been found, it is desirable to be able to move it one turn at a time, the use of a roller coaster would be ideal. It may be desirable to provide a slow motion drive for C2 as this will not only assist the very fine tuning required but also avoid accidental detuning due to vibration when the vehicle is in motion.

The method of adjustment is to tune the transmitter with a dummy load, then adjust the ATU for maximum signal in the receiver and, finally with the transmitter on for very short periods, adjust the ATU (not forgetting the tap on L as well as C1 and C2) for maximum voltage at the base of the aerial. The simple tuning meter, shown in Fig. 2, is suitable for this purpose. The short piece of wire A is placed near the base of the aerial and the ATU adjusted for maximum reading. It should be remembered that this is only a tuning indicator and that it does not indicate a field strength. It cannot, therefore, be used to compare radiation on one band with that on another and the actual reading is of no significance.

* The author has found that a capacitance hat will increase signal strength by as much as one "S" point and , more important for QRP operation, a greater proportion of calls result in contacts.

Proven Mixer Circuits — Martyn Linders



A selection of suitable circuits for direct conversion receiver mixers, produced after several years experimentation by Martyn.

WANTED: HW7 Transciever. Allan Forster, G4NNJ, 38 Ridler Rd. Lydney. Glos. GL15 5BL.

More on the Double-D Beam

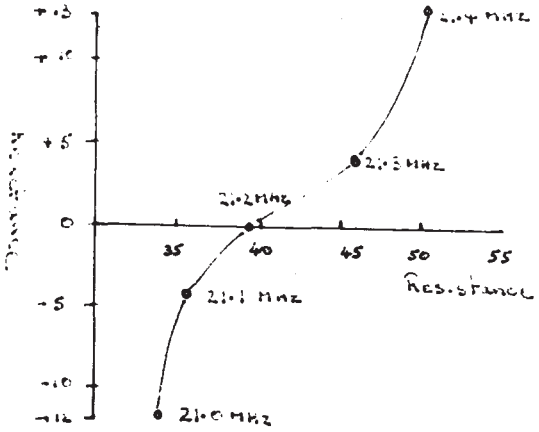
Peter Dodd G3LDO

In the Summer 1980 edition of SPRAT I wrote an article on the Double-D antenna. I subsequently received letters from readers expressing dissapointment in the performance of this antenna. I recently moved QTH and constructed a 21 Mhz version from my own formula and the results were also dissapointing.
Since then much experimental work has been done and the following data is the result of this. The drawings also give some construction tips.
From the graph below the feed impedance is rather low at resonance. If the SWR of nearly 2:1 bothers you, extend the length of the driven element by about 2% and neutralize the reactance with a capacitor of an Xc of 100 - 125 ohms. Typically, at 21 Mhz, an extension of 2 inches (5cm) each side - 4 inches in total (10cm) - of the driven element and a shunt capacitor of 60-70 pf

The polar diagram was obtained from the S meter of a transceiver while rotating the antenna. A suitable modulated signal was generated by a signal generator located in the apex of the roof of the house, at nearly the same height as the antenna and at a distance of three wavelengths.

DIMENSION	INCHES	CM
A and B	3350/f	8516/f
C	2370/f	6025/f
E	1336/f	3397/f
D	700/f	1780/f
Total Element Length	6022/f	15310/f

DESIGN DATA. See diagram for dimension letter

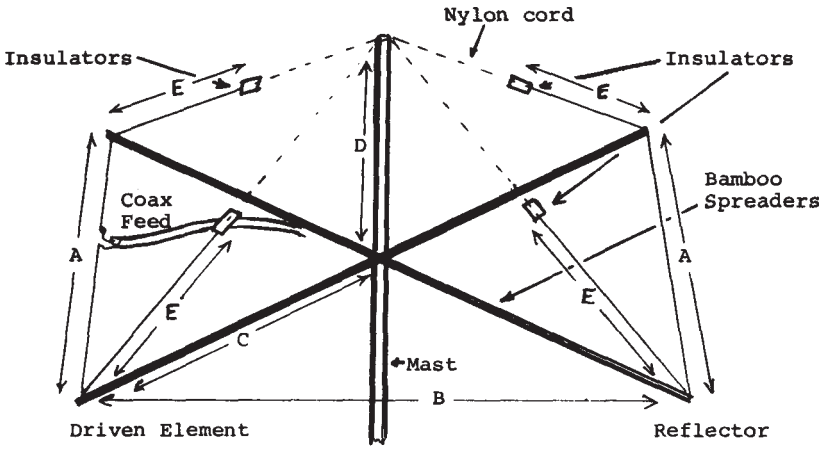


RADIATION RESISTANCE GRAPH

* 66 Arundel Road, Angmering, West Sussex.

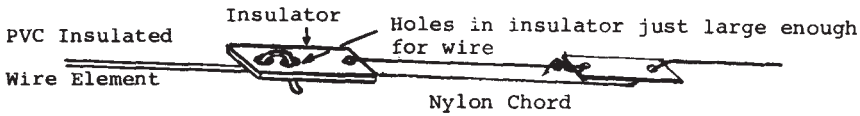
CLUB DATA SHEETS

These are still available from Colin, G3VTT at the QTH in the 1982 QRP GUIDE. Please note that many of the titles are not one sheet, but up to 6 or 8 sheets, so Colin has found problems with members ordering large numbers of titles. Would members restrict orders to three titles at one time please.

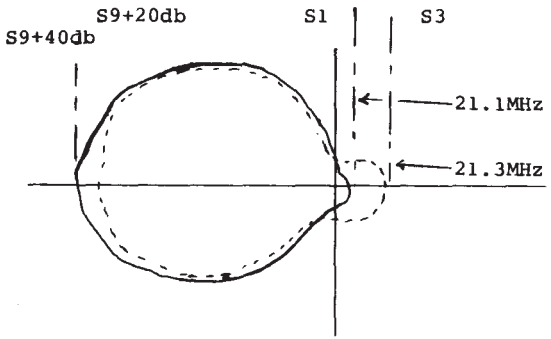


PERSPECTIVE VIEW

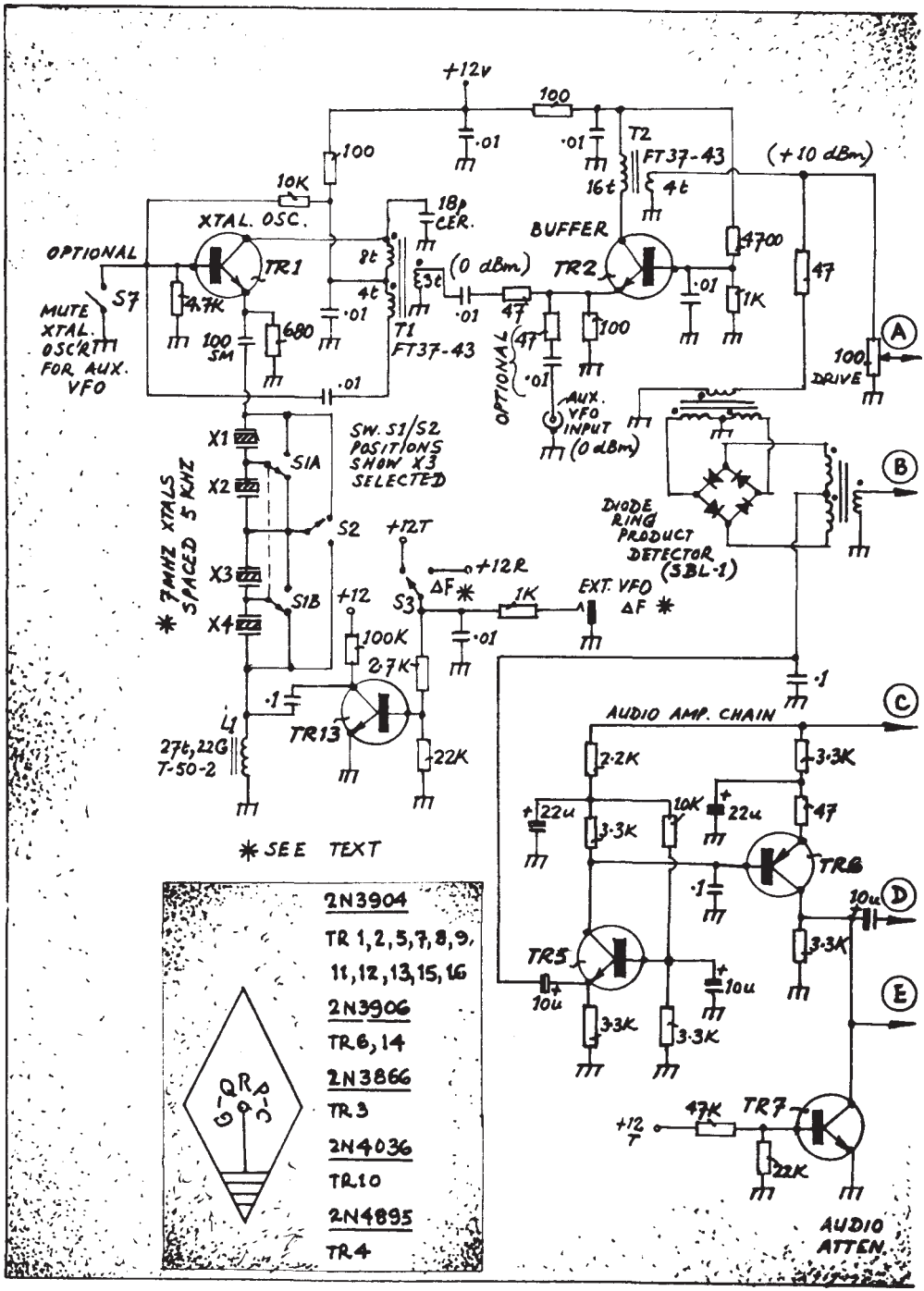
SPREADER DETAIL

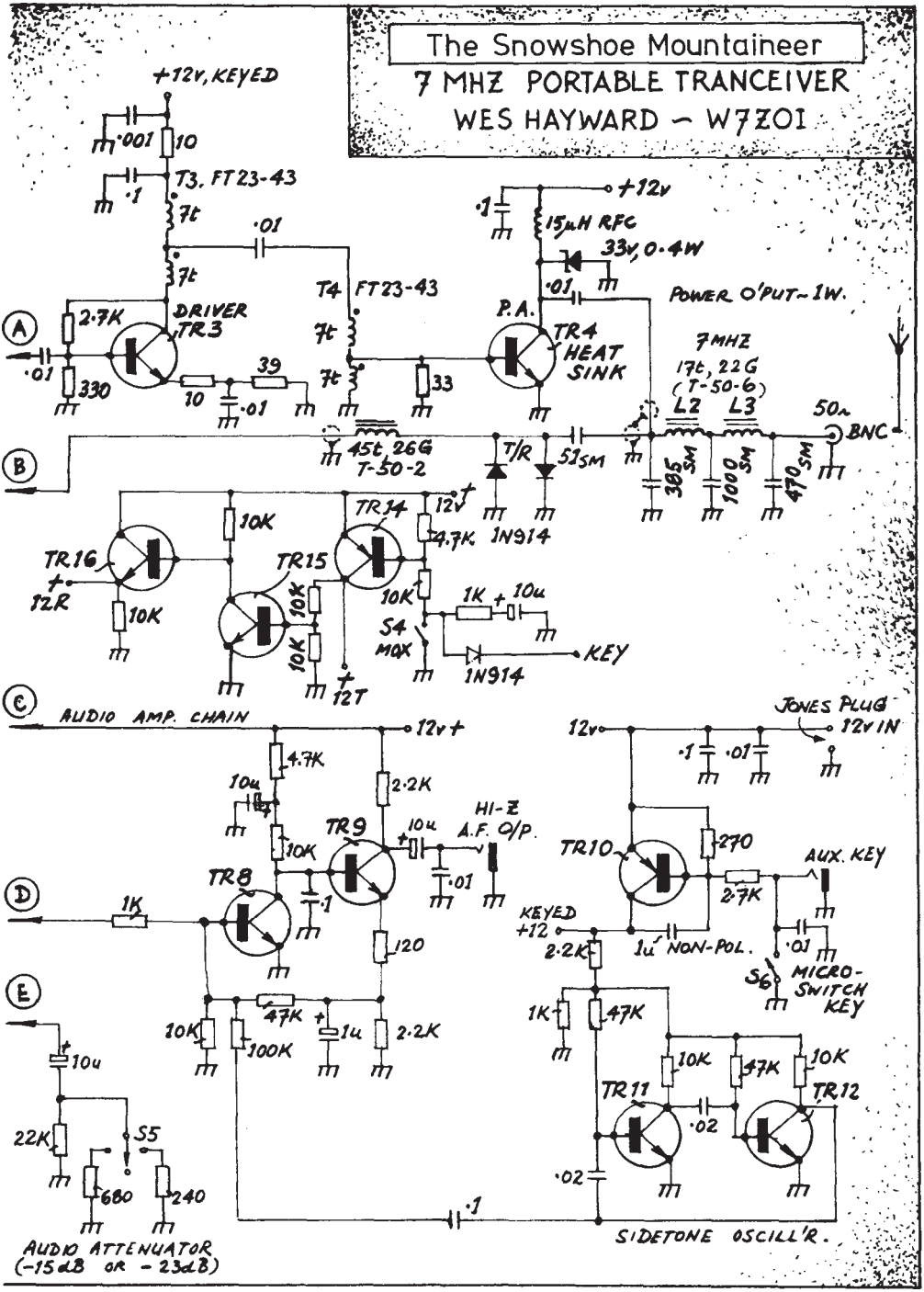


INSULATOR DETAIL



POLAR DIAGRAM, MEASURED AT 21.1 AND 21.3 MHz


+12v
100
.01
T2
FT37-43
16t
4t
(+10 dBm)
10K
XTAL. OSC.
18p CER.
BUFFER
OPTIONAL
TR1
8t
4t
T1
FT37-43
(0 dBm)
TR2
4700
47
1K
S7
MUTE XTAL. OSC'R FOR AUX. VFO
4.7K
100 SM
680
A
100 DRIVE
OPTIONAL
AUX. VFO INPUT (0 dBm)
X1
X2
X3
X4
S1A
S1B
S2
SW. S1/S2 POSITIONS SHOW X3 SELECTED
7MHZ XTALS SPACED 5 KHZ
B
DIODE RING PRODUCT DETECTOR (SBL-1)
+12T
+12R
ΔF *
S3
1K
EXT. VFO ΔF *
100K
2.7K
+12
L1
27t, 22G T-50-2
TR13
22K
C
AUDIO AMP. CHAIN
2.2K
3.3K
22u
10K
47
TR6
D
10u
TR5
E
AUDIO ATTEN.
47K
TR7
* SEE TEXT
2N3904
TR 1,2,5,7,8,9, 11,12,13,15,16
2N3906
TR 6,14
2N3866
TR 3
2N4036
TR 10
2N4895
TR 4
QRP


The Snowshoe Mountaineer
7 MHZ PORTABLE TRANCEIVER
WES HAYWARD – W7ZOI
+12v, KEYED
T3, FT23-43
DRIVER TR3
T4 FT23-43
P.A. TR4 HEAT SINK
+12v
15µH RFC
33v, 0·4W
POWER O'PUT ~ 1W.
7MHZ
17t, 22G (T-50-6)
L2 L3
50Ω BNC
45t 26G T-50-2
T/R
TR14
TR15
TR16
S4 MOX
KEY
1N914
AUDIO AMP. CHAIN
HI-Z A.F. O/P.
TR8
TR9
TR10
JONES PLUG
12v IN
AUX. KEY
KEYED +12
S6 MICRO-SWITCH KEY
TR11
TR12
SIDETONE OSCILL'R.
AUDIO ATTENUATOR (-15dB OR -23dB)
S5

The Snowshoe Mountaineer, or the μ-Mountaineer--Mk-II

Wes Hayward, W7ZOI (7700 SW Danielle Av, Beaverton, Or 97005)

This rig is revised from the one described in Aug, 1973, QST. It is more complex to the extent that more components are used. It is simpler in other ways. The performance is extended over the original.

Circuit Features:

1) No hard-to-get integrated circuits used. Common bipolar transistors
2) No tuning adjustments in the entire transceiver.
3) Improved buffering of oscillator.
4) Self contained crystals with switching
5) Full electronic T/R, receiver muting and automatic ΔFreq.
6) Diode-ring detector for improved a.m. rejection.
7) Provision for use of external vfo including routing of F control.

Device Functions:

Q1, Crystal oscillator, no tuned circuits.
Q2, Buffer Amp., dual inputs, power split for two outputs.
Drive control, internal pot. Adjust for good efficiency at 1W out.
Q3, Keyed driver. Broadband with negative feedback for stability.
Q4, Power Amp. Set up for 1W output. 2N3866, etc, suitable.
Double-π output network, active during receive as well as trans.
Series tuned circuit with diodes for T/R to detector.
Product detector, SBL-1 used, but discrete substitute suitable. SSD.
Q5, Common base audio amp for 50 ohm input R.
Q6, Common emitter audio amp. Followed by attenuators for gain cont.
Q7, Muting switch.
Q8, Common emitter audio amp.
Q9, Output audio amp for high Z headphones (1K or more).
Q10, Keying switch with shaping network.
Q11, Q12, Multivibrator serving as keyed sidetone oscillator.
Q13, RF switch to provide 1 kHz shift of crystal freq. + on R or T.
Q14, Delayed switch. Mutes receiver for short period during and following key-down. Provides +12 volts during key down.
Q15, Q16, Switch with emitter-follower output to provide +12v during R.

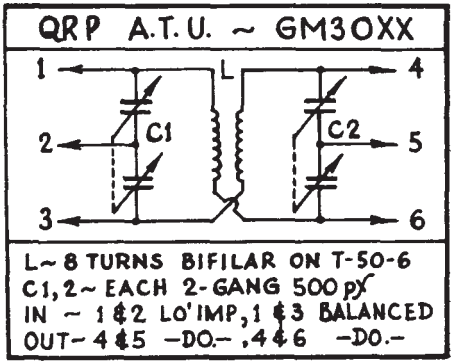
Use

Switch crystals with the 4 combinations of S1 & S2. All crystals should be of the same type. S3 causes a frequency shift, + or -. The shift is reversed when the key is down. When external vfo used, a signal is tuned to zero beat and S3 is then switched to provide desired note. If there is QRM, zero again and throw S3. Nearly as useful as RIT. Note that this rig uses no analog controls. This was done to facilitate operation with gloves or while camped and huddled in a sleeping bag with the snow coming down on the tent. Built to be operated in the dark.

External Connections (used in this version):

1) Antenna. Small transmatch often required. Usually used with low dipole, center up 10 to 20 feet.
2) Power. Jones plug used, arranged so that if power cable should pull away from transceiver, there is no possibility of battery short.
3) Phones. Usually use old pair of Trim "Feather-weight", 25K.
4) Key. Two key jacks. One is small for use with home keyer. Other is a "Stereo" jack, providing key line and power to a keyer.
5) External vfo. One 6-pin connector is used. Insertion of cable automatically shuts down crystal oscillator (S7 function), routes vfo signal to Q2, routes control signal from S3 and provides vfo power. Oscillator is first two stages of transmitter in Aug 81 QST.

73, Wes, W7ZOI



A very useful little ATU circuit which works well and will match almost anything to anything. The coil is 8 turns bifilar wound on a T-50-6 former. Originally published in The Michigan QRP Club Journal, The Five Watter Number 19.

RSGB Low Power Contest [18-4-82] Rules:

1. AIM OF CONTEST TO ENCOURAGE QRP OPERATION.
2. ELIGIBLE ENTRANTS SINGLE OPERATOR STATIONS ONLY. UK ENTRANTS MUST BE FULLY PAID-UP MEMBERS OF THE RSGB.
3. WHEN SUNDAY 18 APRIL 1982,0700 to 1100gmt and 1300 to 1700gmt.
4. SECTIONS (a) BRITISH ISLES STATIONS USING 5W INPUT OR LESS.
   (b) OVERSEAS STATIONS USING 5W INPUT OR LESS.
5. FREQUENCIES 3.5MHz and 7.0MHz BANDS ONLY.
6. MODE CW (A1) ONLY
7. CONTEST CALL AND EXCHANGE CQ QRP. EXCHANGE RST and SERIAL NUMBER STARTING AT 001, PLUS INPUT POWER. EG 569 001 3W
8. SCORING 15 POINTS FOR EACH COMPLETED CONTACT WITH ANOTHER QRP STATION. 5 POINTS FOR ALL OTHER CONTACTS.OVERSEAS STATIONS ONLY UK CONTACTS SCORE.
9. LOGS SEPARATE LOGS MUST BE SUBMITTED FOR EACH BAND.ALL EXCHANGES TO BE SHOWN.
10. DECLARATION EACH ENTRY MUST BE ACCOMPANIED BY THE FOLLOWING DECLARATION:
    " I DECLARE THAT MY STATION WAS OPERATED IN ACCORDANCE WITH THE RULES AND SPIRIT OF THE CONTEST AND IN THE EVENT OF ANY DISPUTE THE DECISION OF THE COUNCIL OF THE RSGB WILL BE FINAL"
    THE DECLARATION MUST BE SIGNED AND DATED.
11. ADDRESS FOR LOGS.RSGB HF CONTESTS COMMITTEE, C/O MR D.S.BOOTY, 139,PETERSFIELD AVENUE, STAINES MIDDLESEX TW 18 1DH ENGLAND.
12. CLOSING DATE FOR LOGS. LOGS MUST BE POSTMARKED NOT LATER THAN 10th MAY 1982.
13. AWARDS THE 1930 COMMITTEE CUP WILL BE AWARDED TO THE LEADING STATION IN SECTION (a). CERTIFICATES OF MERIT WILL BE AWARDED TO THE LEADING THREE STATIONS IN EACH SECTION, AND TO THE HIGHEST PLACED ENTRANT IN EACH SECTION USING 1W INPUT OR LESS.

QRP AMATEUR RADIO CLUB INTERNATIONAL APRIL 1982 SSB QSO PARTY

The above event is being held from 1200 UTC 17.4.82 to 2400 UTC 18.4.82 on the International SSB QRP frequencies. Exchange RS and State/Province/Country - members give their number and non members their output power. Score QSO points (member QSOs count 5 points, non member USA/VE count two points, and non member non USA/VE count 4 points) multiplied by total number of States/Provinces/Countries multiplied by power bonus (8-10w X2, 6-8w X4, 4-6w X6, 2-4w X8, Less than 2w X10. All output power). Awards to highest score from each State/Province/Country. Logs to William W. Dickerson, WA2JOC, 352 Xrampton Drive, Monroe, Michigan, 48161, USA by 20th May 1982.

NEWS.....

ANOTHER SUCCESSFUL WINTER SPORTS

JA worked from Europe ... Ws by the carload ... TI appears on QRP

The 1981 Winter Sports were a tremendous success with QRP stations active from 22 countries and 4 continents. A highlight was the first Japan/Europe contacts in the history of the event. JA6VZB worked members GM3OXX, G3DNF, iOSKK and OK1DKW, and QRP non-members SM6AOQ and PA3AIX. He was running 5W rf output. The trans-Atlantic path proved very good, with several members making it across the pond on every day during which they operated. As usal WB2RZU was the outstanding US signal from his ideal trans-Atlantic take-off point on Long Island. KM8X also did a great job, including a contact with TI2PI who had only taken delivery of his Argo two days before - and it was the first TI worked from KM8X with any power ! VE3ABT kept the Maple Leaf flying, and Paco, EA8ACL, ably represented our QRP amigos in Las Islas De Canarias. Returning to WB2RZU, he worked 14 different QRP countries, 12 of them in Europe, and after reducing power from 5w to 500 mw raised GM3OXX. But the Winter Sports is not all about QRP DX, thrilling as the latter is. On all bands QRP stations were working each other in a relaxed atmosphere, renewing old friendships and making new ones. Many, many stations were active on the LF bands, and it was a pleasure to work them. It is surely this combination of QRP DX thrills and pleasant social contact that makes the Sports so unique.

Now to the awards. The G4DQP Trophy goes to Andy, WB2RZU, who has given so many of us our first two-way trans-Atlantic contact on QRP. It is a well deserved Award, and we all congratulate Andy on a great effort. Certificates of Merit go to the four members - GM3OXX, G3DNF, IoSKK and OK1DKW - who made it to Japan. A great effort lads !

Sincere thanks to all who sent in logs ; without their help this could not have been written. Thanks also to our WQF friends who gave the event such good publicity. It is probably no coincidence that the first year that the details of the Sports are published in Japan, and in Japanese, QRP contacts between Europe and Japan take place!

G8PG Correction !!! SM6AOQ is, of course, a member !

AWARD NEWS

QRP WAC. SM6AOQ

QRP Countries. 50; G3IGU, SM6AOQ. 25; GW3SB, G4GJW.

Worked G QRP Club; 100; OK1DKW. 80; G4CQK. 60; G4FAI, CT4CH, G4JRE. 40; G4JFN, EI6BA, G3IGU. 20; GM4JJG, G3IQF.

Two-way QRP Award; Basic; EI6BA, YU3TVN, YU3TFW, GM4JJG, iOSKK, G3IGU,G3IQF, SM6AOQ. 20 countries; CT4CH

NEW QRP MASTER

Our sincere congratulations to Bengt, CT4CH, on becoming QRP Master No. 7. His many friends will be delighted to hear that Bengt has made it. Well done !

WQF NEWS

With our own large Club now well established we may tend to forget the difficult, slow and often discouraging work of building up a QRP organisation in other parts of the world. Despite varous problems the QRP Club of Celje have reorganised themselves into the YU3EOP QRP Club, and have produced the first copy of thier QRP magazine. For its size this Club is probably producing more QRP activity on the bands than any other. The VK QRPp CW Club have also recently done a major reorganisation and keep on producing an excellent publication. Owing to geographical factors QRP in VK can be tough, but we believe that the VK Club is going places. Our Italian friends of QCA ARI produce an excellent publication "Notiziario QCA", with lots of technical content. They have introduced a Worked All QCA Members Award rather similar to our Worked G QRP Club Award but with special classes for contacts made on lw of cw or lw pep of ssb.They are now holding activity weekends which coincide with ours.

NEWS.....

10 MHZ CONTACTS TO COUNT FOR CLUB AWARDS

The Committee have decided that 10 MHz contacts will count for all Club Awards. This will apply to contacts, cw only , made on or after 1st January, 1982.

THIRD EUCW FRATERNISING QSO PARTY - 19th AND 20th JUNE , 1982.

This year the event is being run by G QRP Club. Rules are as follows.

1 Dates, Times, Frequencies.
19 June. 1500-1700 gmt, 7 and 14 MHz. 1800-2000 gmt, 7 and 3.5 MHz
20 June. 0600-0800 gmt, 7 and 3.5 MHz,0900-1100 gmt, 7 and 14 MHz.

2. Modes/operators. All contacts 2xcw. Single operator only.

3. Classes. Class A.Members of EUCW organisations using QRO - above 10w in,5w out.
Class B. Members of EUCW organisations using QRP - below 10w in,5w out.
Class C. Non-EUCW members, any power.
Class C. SWLs.

4. Information exchanges/reception. EUCW Organisation members. RST/QTH/name /club/membership number. Non-members RST/QTH/name/NM (NM=non-member). SWLs must log both sides of a contact to claim points. EUCW members send as appropriate; SCAG, AGCW, GQRP, TOPS, SARS, HSC, or CWC. Stations may be worked once only per band. Call " CQ EUCW ".

5 Scoring. Transmitting stations; contacts with own country 1, other country 3. SWLs 3 points for each complete contact logged.

6 Logs. Must show date, time gmt, callsign, frequency, info sent and received, and points claimed for each contact. Summary sheet to show name,address, call sign, claimed score, and station details including power.

7 Awards. G QRP Club will issue merit certificates to the first three stations in each class.

8. Entries. Must reach the 1982 Contest Manager by 30 July 1982.Address;- George Burt, GM3OXX, 1/5 Essendean Terrace, Clermiston,Edinburgh EH7 7HD, Scotland. Results will be published in SPRAT.

THE TRIPLE FIVE AWARD - Sponsored By Jacques Cartier, F9YZ

After winning The Silver Tern Award, Jacques said that he would like to donate some form of Award to The G-QRP-CLUB, and after working five USA Stations on all five bands during The 1981 CQ CW Contest, he has announced The Triple Five Award.

Commencing on 1st May 1982, a prize of six bottles of Bordeaux wine will be sent by Jacques to the first six Club members who submit QSL cards to him showing that they have worked the same station on the five bands (28MHz through 3.5MHz). The five stations must be DX stations (outside your own Continent) and be at least 4000Kms distance away from you. After the first six prizes Jacques says he will review the cituation depending on the interest shown.

This is a very nice gesture from Jacques and it will be very interesting to see what can be accomplished by Members trying to qualify for it. Progress will be reported in Sprat as information is received from Jacques.

G3RJV TWENTY AWARD AND THE U.S.A.

Not that I want to change the rules again!, but I have had some representation from U.S. members that 20 countries on 20 metres with a QRP rig is a tall order in the time. I am willing to accept 20 STATES.

We regret to announce the death of Tim, VK5AVE (member 1028) at the age of 55 from a brain tumour. Tim was was 55. Our thoughts and prayers go to his widow, Helen.

We also regret to announce the death of Lew, G3HQQ (member 366). Lew lived at Worthing in West Sussex and was very active on the QRP frequencies with his Argonaut. A 'genuine QRPer', Lew will be sadly missed by those who knew him.

SSB NEWS Ian Keyser G3ROO

I regret to say that the 20 metre net has suffered badly during the last half of November and the whole of December due to a problem that rendered my right arm virtually useless, and that a horizontal position was the only way that I could get some relief, but during January things started to improve. The net is not completely dead, G4HOM, OK2BMA and SMØFSM, the stalwarts, are still around, but present conditions are such that the skip is too long most days. The usual programme on this sked is that I call for the first ten minutes on 14330 CW/SSB, and if no response, I announce on CW to QSY to 3560 CW.

The new 10MHz band is proving to be very interesting with VK and ZL on the band most mornings at 0700Z onwards, and these can be worked with QRP CW. However, I am not very happy with the situation regarding SSB. If RTTY had not been included in The RSGB Plan for the top 10KHz I would have no complaint, but to allow a mode that completely destroys a band of frequencies as wide as your receiver passband due to its 100% duty cycle, and yet to discriminate against a mode with a duty cycle as low as 25% (and through which a good CW operator can work) baffles me. I wish to propose that the bottom 35KHz is CW only, and the top 15KHz is ALL modes. Please let me know your feelings on this, remember, I can do nothing without your support, and we will see what we can do.

To start the members news are two letters that arrived only two days after I had posted 'copy' to George. Everett, W6YVK has written to Gus, G8PG calimng his QRP Countries Award with a staggering 126 countries, and his QRP WAC, all on SSB. This was done with an Argonaut at 5 watts PEP, and in only 2½ years - well done Everett. He goes on to say that he is mainly active on 10 and 15 metres, but with some activity on 20, (don't forget 14330 at 1730Z daily).

A card from PA3AJU, Gerrit, is running three watts out on 80 and 20 to a homebrew rig into two dipoles, one 40 metres long, and the other ten metres, both fed with 300 ohm ribbon. DX so far includes EA9, PY, AP2, C31, CN8, and JX5, the CW and SSB total is now up to 70, but the cards are very slow in coming in. Hope to see you on 20 Gert!

More recent news comes from Frank, G3YCC, who is still battling with a ZVC board and drive problems. He is toying with re-building to The Tunbridge.

Peter, G4BDQ has returned to the 160 metres sked (1885 at 1900Z on even dates), Antenna problems put him off the air a couple of months back, and the prospect of a house move with a much better antenna system removed the incentive to rectify the problem so he went to VHF only. A quick note from me re-kindled the fire!

Finally an interesting letter from the other side of the world. Michael, ZL1ABS gives me all the licensing details over there, and they are very similar to ours. We are trying to fix up a sked and will give details of times/frequencies here.

Due to day work on Saturday 6th and night work on Sunday night, I could only get on the sir for a few hours on Saturday evening and Sunday morning for The Marconi Contest. Running four watts DC input there was no shortage of contacts, but enjoyed spreading the news of The Club and the new contest. There was considerable interest with several stations calling on reduced power and being surprised that they 'got through'.

Well, that's all for now, do not forget the skeds, and please let me know your feelings for 10MHz.

73's for now,

Ian - G3ROO

Exchange: an FT75B transceiver plus AC/DC PSUs and Yaesu VFO for a general coverage receiver (FRG7?) or W.H.Y. (Liner 2? etc.)
Frank Lee,G3YCC, 8 Westland Road, Kirkella, Hull. N. Humberside.

WANTED: Circuit, Description or details of AIRMEC SIGNAL GENERATOR TYPE 204. Expenses refunded. S. Santucci, IØSKK, Via Boccanegra 8, 00166 ROME. Italy.

WANTED: Circuit diagram/Manual for the Codar T28 and PR30 preselector, to buy or borrow, all postage expenses will be met. Bill Stevenson G4KKI, 10 Compton Street, Swinton. Lancs. M27 2BD.

IMPORTANT CLUB ANNOUNCEMENT

R.S.G.B. Convention 1982

The G - QRP - CLUB are pleased to announce that we have been invited to provide two H.F. stations for The RSGB HF Convention on June 19th in Oxford. These will be the only stations in use at the convention and we are especially pleased that at this important national amateur radio event, the working stations will both be QRP.

The Club intends that one of these stations will be 100% home built equipment and this station may also include an exhibition of home made QRP equipment made by members. The RSGB hope to be able to offer The Club a meeting room for members to use at some time during the event.

The G-QRP-CLUB Committee hope that as many members as possible will be able to attend. It would be good to have a strong Club representation at such an event and to have a good turn out for use in the meeting room. We would also like members to bring along any items of home made equipment they may have, however simple or scruffy! Although we may not have room to display all members equipment on one of the stations, part of our get together could take the form of sharing and examining members ideas and examples of home built equipment.

This invitation from The RSGB represents something of a breakthrough for The Club and we hope for a high level of membership support and interest, as well as a very enjoyable day. Further details of the convention will be announced in Rad Com. At present Pat Hawker, G3VA and Louis Varney G5RV are to speak at the convention. The basic details are :-

SATURDAY JUNE 19TH. BELFRY HOTEL. MILTON COMMON. OXFORD.

MEMBERS NEWS

CHRIS PAGE G4BUE

The building work on my QTH is progressing, but is not yet finished, and although I had one week-end on the air at the begining of February, I will remain QRT for a few more weeks yet to get the work completed. Judging from the reports from you all regarding the new 10MHz band, I am looking forward to trying that band.

Probably the first multi QRP QSO on the new band was between G3RJV, G3VTT and G3ROO on 3.1.82 at 1400Z. George used The Ben, Colin The OXO and Ian a new 30 metre version of his Tunbridge.

Petr, OK1DKW is QRV on the band with a modified TCVR running between one and five watts out. So far he has worked plenty of Europeans but no DX. Gordon, G3DNF was active during the first few days of January and also found it very good for Europe as did G3VTT who described making QRP contacts as "dead easy". HB9IK also found good results around Europe and thinks it is going to be a very good band for QRP, whilst Alan, G4LVW has been working Europeans with 2 watts output. GM3MXN built a transvertor and worked a ZL with it at 1720 whilt using a dipole at only 12 feet! The best QRP contact I have heard on the band to date. G4JFN made the first two-way to the U.S.A. that I heard when he worked N2IT.

Just to illustrate how good the new band has been, it even prompted a report from Ian, G3ROO our SSB representative - nice to see you on the mode Ian. Ian describes it as a fantasti band and at the time of writing had worked 16 countries including VK and ZL with a long wire at 28 feet high.

The 1981 CQ CW Contest seemed to have attracted a lot of attention from members in the QRP Section. George, GM3OXX said he was up most of the week-end, and in one hour worked 45 USA stations - that is some going on QRP George. F9YZ worked 9Y4KG on 3.5MHz during the Contest to complete a WAC on that band with QRP. A very fine achievement Jacques. Jacques also worked five USA stations on all five bands and this has prompted The Treble Fives Award sponsored by Jacques (see elsewhere in Sprat). G3LOP found conditions on 21/28MHz very good, as did A1, IØSKK who kept to 21MHz and worked 58 countries and 25 zones. OK1DKW kept to 28MHz with a single delta loop only 15 feet high and worked 19 countries in 13 zones in only ten hours of operating including N3RS who was also running QRP. KA1CZF was working /P from the deck of his boat with an Argonaut and a vertical. Tom made 56K points, his best effort so far. KM8X tried The CQ for his first big Contest and had a great time scoring 92K points. On 7MHz he worked nine countries and eight zones and was very surprised as he thought the band was dead for QRP DX. Chris has just been awarded QRPp DXCC Trophy No. 36 - congratulation.

Look for some increased QRP activity from OK land. The well known OA8V QRP article from CQ Magazine appeared (in Czech) in the OK Radio Journal in October, courtesy of OK1DKW. Now to a couple of moans: Several members have mentioned ove past months that several Club members will not QSL, despite stamped addressed envelopes being sent. This is not in the spirit of The Club and all members are urged to QSL, even if they do not want QSL cards themselves. The Members Certificate gives a lot of pleasure to a lot of members, but the QSL cards are needed to apply for the Certificate. So please acknowledge all requests for QSL cards especially from other members. The second moan is the number of members who go back to "CQ QRP" calls from members, but use QRO. Once or even twice is OK, but there are several members who only seem to use QRO. That is fine, but if you do use QRO, please keep away from the QRP frequencies as the QRM that you cause does not help those members who are using QRP.

DK5RY hopes to be QRV from LX for The Summer IL QRP Contest. Willi explains that due to a change in the LX licensing procedures his call will now be LX/DK5RY. G4GOF has just received The AGCW QRP 250 Award for 1978 - well done Jesse. Leo reports on his DXpedition to ZB2 last Autumn, and that he did not work any QRP stations, mainly due to the poor conditions on 7MHz. Look for Leo between 10/24 July when he will also be active from LX, as LX/HB9ASJ.

Look for some big signals from W6SKQ, Bob has now got a two element quad for the HF bands up on a new 51 feet tower. G4JFN has been using his Argo and Mini-Quad for DXing and his best contacts are VU on 28MHz and KL7 on 21MHz. Bob worked G3LQI/M on 7MHz. He also tried some of OK1DKW's Czech and was flummexed when an OK station came back to him in Czech! Congratulations to George (GM3OXX) for qualifying for WAS and WAZ, both on QRP. WL4FZU mentions the good conditions on 21MHz when he worked over 1600 miles into New York with his HW8 and a dipole at only 12 feet. Frank, G4MHY has become hooked on QRP due to my article on QRP in Short Wave Magazine (that was the idea in writing it Frank, hi), and Finbar, EIØCF continues to support the 7MHz net on Sundays which he enjoys greatly.

Congratulations (again) to Tony, G4FAI for winning the U.K. entry in The HA Contest 1981, I guess some one must give you some competition this year Tony. Eric, G4EBO worked 19 two-way QRP USA stations during The ARCI Contest. In The VK QRP Contest Eric heard F9YZ working VK7UV, and after calling the VK7 hooked up with Jim, KL7IBT who was running his Argo. Two-way QRP with KL7 - great going Eric. G3YCC is another member who has been working 21MHz, Frank has worked PY, FP8 and CM amongst the more common prefixes. Bill, G4KKI who has sold his QRO gear also likes 21MHz. He has worked a VK3 with his ZL special indoor antenna Tom, EI6BA has swopped his FT200 for a FT7 which he hopes to run /M. SM1CNS says he is "really bit by the QRP bug", he is active with a HW8 and two LW antennas, each 1000 feet long and 60 feet high!! Ben, CT4CH has now reached 105 DXCC, G3IQF got to 54 and I7CCF up to 113.

Now to Murphy's Law Section:- At 0230Z one morning, SMØFSM thought his house had been bombed, but it was ice and snow on the roof causing it to cave in, bringing down the antennas with it. G3IQF had a burst pipe right over the rig two days before The Winter QRP Contest, and after drying it out all seemed well. (We don't advise members to clean their equipment in this manner, hi hi.) Finally to Rob, G4JCY who eventually got on the air with a homebrew 7MHz TX and then had his chimney come crashing through the roof of the house during one of the Winter storms. Hope you all have better news to report next time.

G4FAI has discovered that his Aronaut is only putting out 1¼ watts due to R14 missing. This makes the FSD meter reading very misleading. Other Argonaut owners please check your R14! G4GDR acknowledges the help given by G2NJ and G5BH to his recent rebuilding on The B2, and Andy, WB2RZU says he will be QRV from his 22 feet boat during The US Field Day.

K3TKS is active with a HW8 and Hustler 5BTV vertical. George has recently worked GD3FXN and only needs KH6 for his WAS. Chuck, KA2KOA worked G3VFP for his first member and hopes to be more QRV in the Summer. G2CGL between working some nice DX on the HF bands has been working 144MHz with a home brew rig.

A nice letter from G4MIJ, Rod which reads "The QRP disease is highly contagious! The disease is transmitted by 'Sprats'. My first two copies left home some months ago and I think two G's will be the next to succomb. With me it is in danger of becoming an obsession. Starting from tomorrow I'm going to give it up - for an hour or two anway!! Being a family man, I've only ever strayed off the straight and narrow to go fishing. If you could see me now...." Nice sense of humour Rod.

G4BUE is definately going to The RSGB Convention in June and hopes to meet as many of you there as is possible. Most of The Committee will be there and it will be a good opportunity to tell us what you like or do not like about The Club. Keep the letters and your news coming, and hope to see you very soon on 060. Let me know how your Spring QRPing goes.

Best 73 and QRP DXing

Chris Page - G4BUE

Membership Changes:

NEW QTH:

135	VE7CKF	303-1165 West 13th Ave.Vancouver BC. Canada.
152	G3WOV	36 Southfield Ave. Ripon. N.Yorks HG4 2NR.
190	GM4EWM	'Gormond'Walkers Cres.Lhanbryde.Morayshire.IV30 3PB.
243	G4ETS	41 Sibland Rd.Thornbury.Bristol.BS12 2EP.
282	G4DQP	19 Cowley Cres.Padiham.Nr.Burnley.Lancs.BB12 8SX
286	G4EQB	54 Main St.Ratby.Leicester.
379	N4FRX	P.O. Box 1053.Oneco.FL 33558.USA. (Note New Call)
532	SMØGMG	Grevq 10.S-11453.Stockholme.Sweden.
547		3125 Mountbatten St.Saskatoon.Sask.S7M 3T3.
599	ZL1HV	882 East Coast Rd. Browns Bay.Aukland 10. N.Z.
638	SM1JBM	Box 43.620 16 L Jugarn. Sweden.
645	N8ALE	P.O.Box38.Scottville.Mich.49454 USA.
667	G4FMD	16 Barlows Reach,Chelmsford.Essex.CM2 6QA.
714	EI7DN	113Seaford Rd. Clontarf. Dublin.3. Eire.
809	KA5ELD	P.O.Box 651 35 Lubbock. TX 79464. USA.
832/3		Langi Kal Kal.Trawalla,Victoria 3373.Australia.
863	G6AUW	490 Radipole Lane,Weymouth.Dorset.
870		3235 W 161 ST. Markham. ILL 60426. USA.
892		80 Nadder Park Rd.St.Thomas,Exeter.Devon.EX4 1NX.
893	G4HOM	47 Tilshead Cl.Druids Heath,Birmingham.14.
901	K8IF	11729 MerrimanRd.Livonia.MI 48150.USA.
920	G4CHK	21 Crosslane East,Gravesend,Kent.DA12 5HD.
933		25522 W.Oakland Dr. Ingleside,Ill. USA.
988	WL7AOJ	P.O.Box 61029.Fairbanks, Alaska 99706-1029. USA.
1039	G3VYM	36 Grange Cl.Hitchin,Herts.SG4 9HD.
1047	G3UFZ	4 Elba Cl.Goodrington,Paignton,Devon.TQ4 7LW.
1056	L.Dobson,	4 Spring Lane,Carisbrooke,Newport.Isle of Wight.PO30 1NP.
1103	WA2AHP	2 Rustic Road,Stoneham.Boston.MASS 02180.USA.
1110	WA8TCG	2311 Eoff St.Wheeling,WV 26003.USA.
1123	G8SNG	Officers Mess,RAF Chivenor,Barnstable,N. Devon.

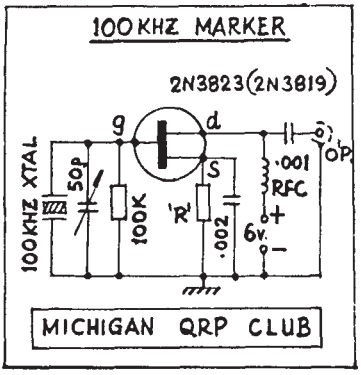
NEW CALLSIGNS:

047: F6GLP, 480: G4IBK (ex G8OOG), 507: GM4FQE, 832: now VK3DFI,
908: G4NFQ, 923: G6ALJ, 922: G4NAJ, 1004: KB5LT, 1104; GI4NMZ(GI6AEJ)
1041: G4LYJ (ex G8NKO) 1043: G4LUN, 1057:VK4EGT, 1080: VK4KOL,
1095: G4NNJ (ex G6EWY) 1197: EC6HS.

RESIGNED: 180, 202, 404, 690, 716, 1046, 1075.

PLEASE NOTIFY CALLSIGN AND QTH CHANGES QUOTING MEMBERSHIP NUMBER.

WANTED:Panda Cub-G4GDR (QTHR)



1257	KA1MF	D.Hughes, 3 Baxter Rd., Acton, Massachusetts, USA.
1258	G6EPT	L.Robinson, 70 Velsheda Rd., Shirley Solihull, W.Midlands.
1259		G.Hubley, R.R. 1, Lumby, B.C., Canada, V0E 2G0.
1260	W2JEK	D.Younger, 266 Adams Ave., River Edge, New Jersey 07661,USA
1261	G4MQV	J. Sanderson, 5 Babbacombe Drive, Ruddhill Est., Ferryhill,
1262		F. Bibby. 6 Sycamore Walk, Horwich, Bolton, BL6 6TD. Co.Durham.
1263	EI1DG	P.McGrath, 12 Gortmore Pk., Fingles South, Dublin 11.
1264		L. Bush, 44 Leech Croft Rd., Wallington, Surrey.
1265	EA4AOY	C.Paco, Embajadores, 147, Madrid 5, Spain.
1266		C. Bradbury, 22 High St., Thornbury, Bristol, BS12 2AH.
1267	G3IOI	R.Pascoe, 118 London Rd., Wickford, Essex, SS12 0AR.
1268	G4C6F	W.Badz, 36 Luckington Rd., Horfield, Bristol, BS7 0US.
1269	G6RO	R.Kaye, 6 Belmont Ave., Baildon, Shipley, Yorks, BD17 5AJ.
1270	SM1CNS	T.Bevenheim, Hastgatan 19, S-621 VISBY 2, Sweden.
1271	G4MWN	F.Brown, 55 Baldock's Lane, Melton Mowbray, Leics.
1272	VK4AIN	I.MacKenzie, 864 Southpine Rd., Everton Park, Brisbane 4053,
1273	AJ1Q	W.Rolline, 105 Lakeside Ave., Wrentham, Massachusetts, Australia
1274		N.McCormick, 37 Newtown, Tadley Basingsto e, Hants. 02093,USA.
1275	G4MMG	A.Beecher, 65 De La Warr Rd., Bexhill-on-Sea, E.Sussex.
1276	W6RCP	J.Holmes, 136 Reed Way, Santa Cruz, CA95060 USA.
1277		S.Barlow, 30 North Dr., Bispham, Blackpool, FY5 3AQ.
1278	ZL2BJC	I.Hill, 29 Holdsworth Ave., Upper Hutt, New Zealand.
1279	KD4XX	C.Wooten, Rt.2, Box 21, Jasper, Tennessee, 37347, USA.
1280	G4HCP	A.Roughley, 164 Swinton Hall Rd., Swinton, Manchester,M27.
1281	KH6CP	Z.Lau, 2344 Pacific Heights Rd., Honolulu, HI 96813, USA.
1282		E.Lond, 53 Old Butt Lane, Butt Lane, Stoke-on-Trent, Staffs
1283		E.Evans, 04 Burdiehouse Street, Edinburgh, EH17 8EY.
1284	G6BSF	A.Booth, 71 Oversetts Rd., Newhall, Burton-on-Trent.
1285	ON6LJ	J.Lacroix, 98 Oude Bleken 2400 MOL, Belgium.
1286		A.Martin, 57 Tithelands, Harlow, Essex.
1287	G3UTI	U.Smith, 36 Cleveland Terr., Darlington, Co.Durham.
1288	G3VFP	D.Kirby, 17 Laleham Green, Bramhall, Stockport,Cheshire.
1289	G6ASF	R.Williams, 17 Westover Rd., Westbury-on-Trym, Bristol.
1290	K3TKS	D.Gingell, 3052 Fairland Rd., Silver Spring, Maryland 20906.
1291	GW6ESP	K.Best, 17 Chepstow Cl., Croes y Ceilog, Cwmlson, Gwent. USA
1292	G4LQF	N.Field, 14 Regent Rd., Harborne, Birmingham 17.
1293	G4MSN	R.Slator, 14 Fairhaven Ave., Shirley, Croydon, CR0 2PW.
1294		A. Hopkings, 17 Hafod Rd. West, Penrhyn Bay Llandudno,LL30
1295	WA3VVG	R.Lundberg, Rd 1., Box 80 Center Valley, PA 18034,USA.
1296		M.Mathers, 16 Cambria Rd., Peasley, Notts., NG19 7RL.
1297	G3HSU	K.Richards, 25 Weir Rd., Hemingford Grey, Huntingdon,Cambs.
1298		P.Zaversek, Zagrad 22/b, 63000 Celje, Yugoslavija.

1299	N6HY	D.Lewis, 1337 Vine St., Paso Robles, CA 93446, USA.
1300	EI5ATB	W.Furlong, Gobbinstown, New Ross, Co. Wexford, Eire.
1301	G8XBD	C.Shepherd, 4 Codgells Close, Chartridge, Chesham, Bucks.
1302	DT3PT	J.Leimer, D6500 Mainzl, Josefsstr. 14, W.Germany.
1303	KD6VR	T.Fitzwater, 801 Reeves St., Ridgecrest, CA93555,USA.
1303	G8ZRY	J.Stevenson, 61 Magnolia Way, Brentwood, Essex.
1303	G3VTE	R.Swetmore, 18 Tideswell Rd., Sandford Hill, Longon, Stoke-onTrent.
1306	G4ILR	C.Howett, 10 Bishops Cl., Little Downham Nr.Ely, Cams.
1307	DK6AO	K.Rosenplaenter, Worthsatenwinker G, 3380 Göstar 1, W.Germany.
1308	G4LOP	C.Hannah, 5 Main Rd., Orby, Nr.Skegness, Lincs.PE24 5HT.
1309	G4NKH	G.Joyce, 86 Vale Dr., Chatham, Kent, ME59XA.
1310	G4GLV	A.Burgess, 7 Platt Str., Springhead, Oldham, Lancs.
1311	G4FGK	R.Tandy, 13 Edith Rd., South Norwood, London, SE25 5QE.
1312	G6GKN	J.Coppard, 20 Woodlands Rd., Baughurst, Hants.RG26 5NZ.
1313	G3SZW	R.Wheatland, 17 Benning Close, Bracknell, Berks.RG12 2ER.
1314	ON7LO	G.Lodewijckx, Eindhoutsebaan 29, 3990 Meerhout, Belgium.