SPRAT

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DEVOTED·TO·LOW·POWER·COMMUNICATION

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Moser - PY2TU

12 Construction Items ➪

Microwatt Meter - 160/30M Converter - All bands Z Match X Beams - CW Monitor - Grilo TX - RX Front end - HW8 Mods 10FM Mod - PreMix VFO - DSB80 Notes - QRP in Cayman Is. Award, Contest, Members News.....

➪ New Club Competition

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

Dear Members,

As Spring approaches we can begin to look forward to radio rallies and events. I hope this year to attend the rallies at Drayton Manor, Alvaston Castle, Droitwich and Derby. I have several club talks arranged for the summer including Swindon, Droitwich, Watford, Buxton, Midland ARS, Mansfield, St.Albans, Malvern, Peterborough, Pontefract, and Hatfield. In fact, I have had to close the list for my club talks for this year! One of the most enjoyable parts of visiting club and rallies is meeting and talking with club members. QRPers are a very friendly bunch of people and my enjoyment of our great hobby has been enhanced by meeting many club members. It maybe that you are happy to plod along alone, or do not know any local club members, but why not wear your club badge at radio events to seek other members? Perhaps more small groups of members could meet together in their locality?

This winter the hf bands have been flat for most of the time and several club members have enjoyed using 160M. We hope to add 160M to the frequency listings in the activity periods for next year, probably with a new calling frequency...got any ideas? It would be a good idea to run some 160M material in SPRAT, so if you have any ideas or circuits please send them. No need to be an author for SPRAT contributions, just a sketch of a circuit, with values, and brief notes are all we want for any SPRAT item.

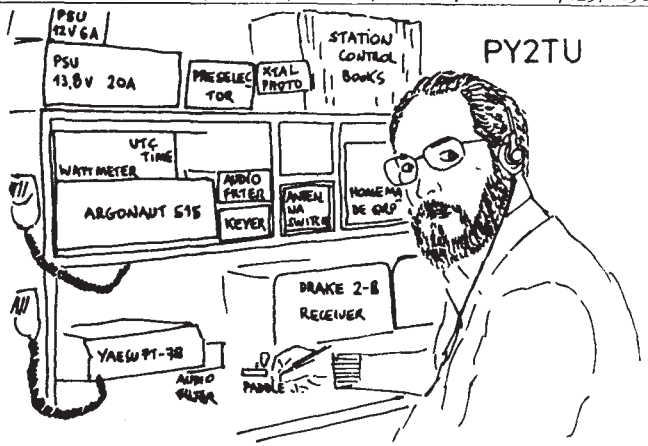
73 fer nw, perhaps cu around this summer....

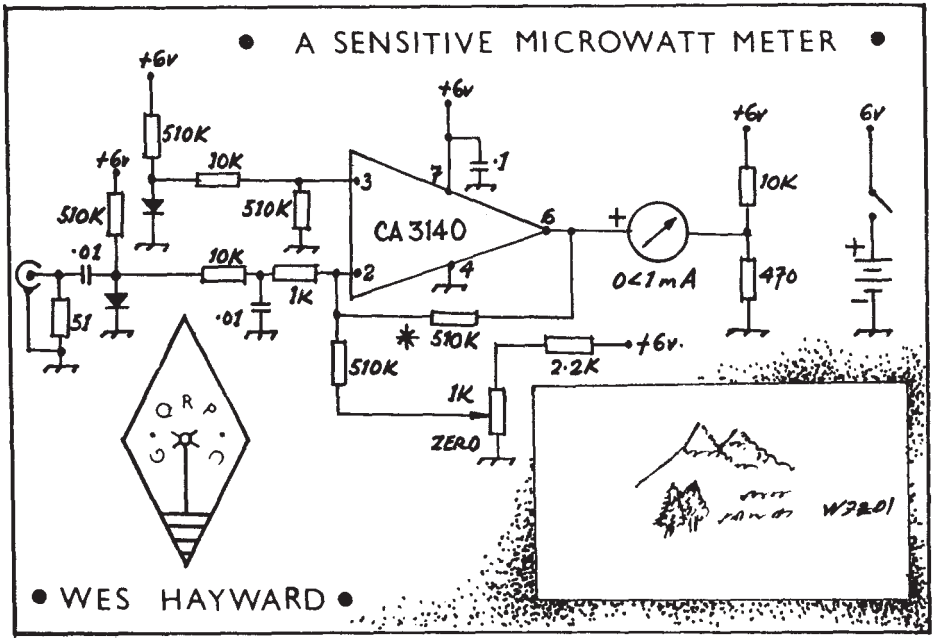
G3RJV

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 will automatically be stamped in sequence onto copies of SPRAT, if you have already paid ignore this notice.

DUE: 91-120, 201-222, 273-292, 393-418, 522-572, 772-833, 1082-1157, 1315-1375, 1564-1763.
OVERDUE: 0-90, 178-200, 254-270, 351-392, 466-524, 619-771, 1000-1081, 1257-1314, 1464-1563.





A SENSITIVE MICROWATT METER By Wes Hayward, W7ZOI

Shown in the firgure is the circuit for a simple RF power meter with excellent sensitivity and stability. The sensitivity results from bias applied to the diodes. Low drift comes from using an Op-Amp with MOSFET inputs for low bias current. Full scale sensitivity is -10dBm, or 0.1 milliwatt when silicon diodes are used. Sensitivity improves by about 5dB with hot carrier diodes. Minimum detectable signal with silicon diodes (IN4152, IN914, etc) is about -23dBm for a meter deflection to 0.05mA. Sensitivity changes slightly over the frequency range from 1 to 1000MHz. Leads should be kept very short for the RF portions of the circuit if the unit is to be used at VHF/UHF.

A 51 ohm input resistor is shown; it may be eleiminated for significantly improved sensitivity, but at the price of measurement accuracy. Full scale sensitivity drops to less than a microwatt if a tuned circuit is used. This could be the basis for a very sensitive wave meter.

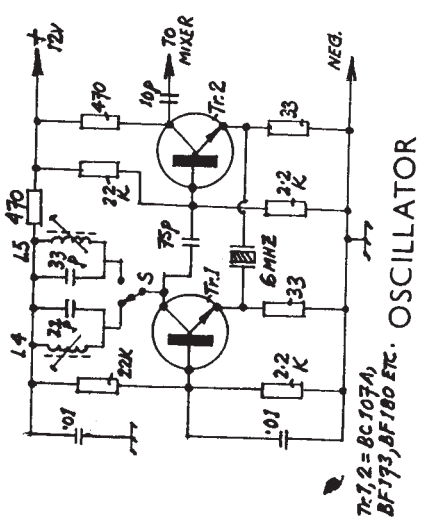
This unit is normally used as a piece of test equipment. However, it may be used by the milliwatting enthusiasts as an in-line power meter. This is done with a coupler like the one shown on Page 151, Fig. 23 of Solid State Design for the Radio Amateur (A.R.R.L.). The system is calibrated with a step attenuator and a higher power indicator such as the meter shown on Page 147, Fig. 9 of the same book. That meter may be calibrated against a DC source using the methods popularised by Ade Weiss.

This meter is extremely sensitive, so do not apply a transmitter or even an antenna directly to the input. Attenuators should be used. The battery is a pack of penlight dry cells. Current consumption is only a few mA. The circuit will function with no changes with a 9 volt battery.

NEW CLUB CRYSTAL PRICES: THE CRYSTALS AVAILABLE FROM: P.R.GOLLEDGE ELECTRONICS, MERRIOTT,SOMERSET.TA16 5NS. ARE NOW £3.50 each inc. VAT & P.P. (including holder) The frequencies are:3560,7030,14060,21060,28060. plus 14030,14040 & 14050.

160 and 30M Receive Converter

Maurice Selby G4LV



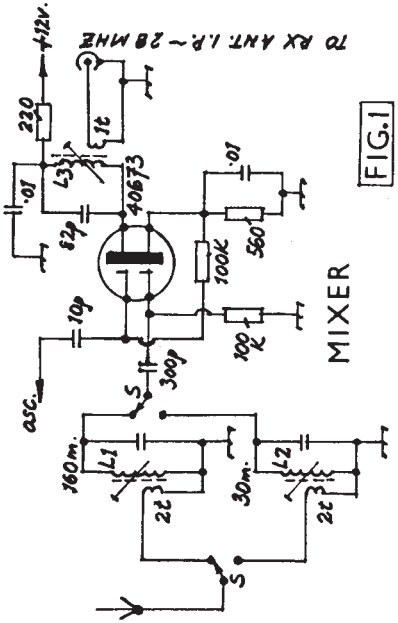


FIG.1

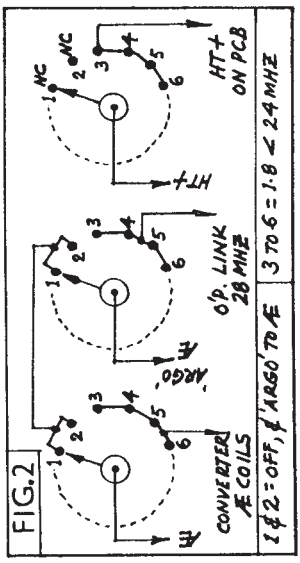


FIG.2

GOODBYE FROM RICH....

Early in April, my wife, Pat, the children and I are moving back to the USA, to Scott Airforce Base, Illinois. We would like to thank all G QRP Club members we have met personally or on the air for making a great tour of duty in the UK. We return to the USA with memories we will never forget. I have even influenced some UK members - G3VTT in US submarines, G3RJV in VW Campers and G4BUE in using the G5RV antenna! I will be keeping my ear open for UK G QRP Club stations.
God bless you. Rich Arland G5CSU (K7YHA).

RECEIVE CONVERTER FOR 160 and 30m. Maurice Selby G4LV

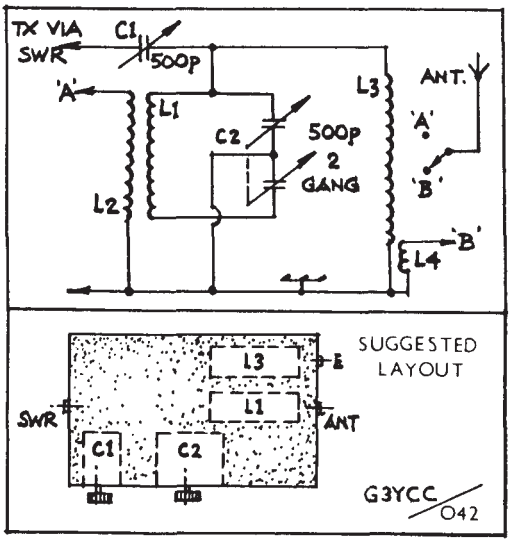
The circuit shows the converter which brings both bands onto the 10m band with a single crystal in the 6MHz range, as follows:
With 6MHz exactly,

2MHz = 28.00 1.8MHz = 28.20 (Reverse tuned)
10MHz = 28.00 10.2MHz = 28.20 (Normal tuned)

Note that some crystals overtone quite a way from the fundamental so pick a crystal to give a more mid band range. The prototype used 6033KHz.
The coils are on ex-TV 5/16" formers, grid dipped to resonance. The cans and bases were removed and the formers glued onto the PCB. If breakthrough poses a problem (not in the prototype) cans may be used.
Fig.2. shows the wiring of a wafer switch in the prototype, the rest of the switch operates a 4 band version (4, 2 pole, way wafers on the switch). The tuned circuit in the oscillator could be just one inductor with switched trimmers.

A Switched All-Bands QRP Z Match

Frank Lee G3YCC



VC1 One section of a 500pF broadcast type
VC2 Both gangs of a 500pF broadcast type
L1 6 turns PVC stranded wire on 2⅜ inch diameter water piping
L2 As L1 with turns wound on side by side with L1 on same former. Coils mounted away from the side of the box
L3 13 turns as L1
L4 6 turns wound as L2 at earthy end of L3
S1 SPDT toggle (position A tunes 14, 21 and 28MHz, probably the new bands, but not tried. Position B tunes 3.5 and 7MHz).

The unit is wired as shown for coaxial fed antennas. For a balanced feed, disconnect the bottom of L2 and L4 from earth and connect to a separate terminal or socket.

Used with a full size G5RV, a perfect match on all bands, without plug-in coils, is obtained. A direct comparison with a commercial tuner costing 20 times the cost of this design, showed no difference in performance. A standard toggle switch is used for S1.

To make a compact unit, a built in SWR indicator could be employed, but was not considered as my Argonaut has a SWR indicator incorporated in it.

Horizontal X Beams Brice Anderson W9PNE

An X Beam is basically a two element yagi with shortened elements pulled together at the centre. Wire loading tails at the ends of the arms compensate for the shortened arms.

The final form of the X beam is as shown in the sketch. All arms are of the same length, but the driven element tails are longer than the director tails.

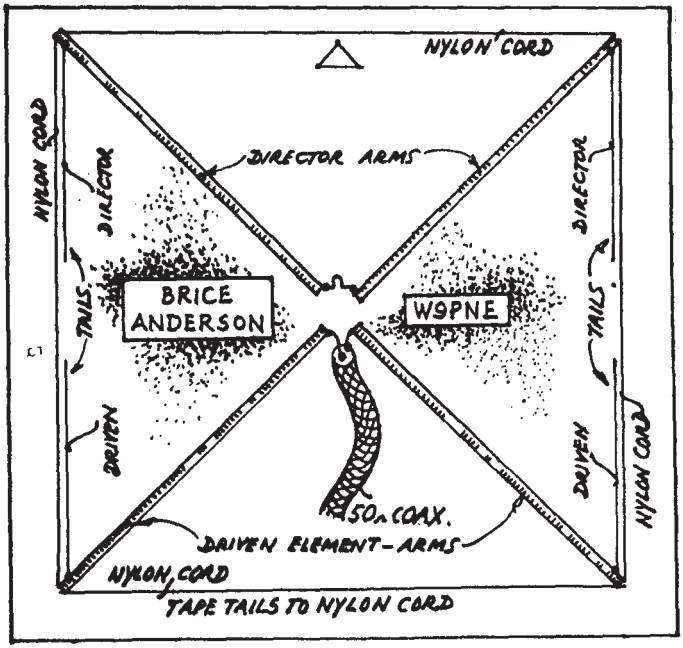
I have determined that the arms may be as short as 75% of the length of one half the driven element of a conventional yagi, using tubing. If the arms are much shorter, the tails will touch. The longer the arms, the shorter the wire tails will be. I use (U.S.A.) No. 19 stranded vinyl covered wire for the tails. Wire size is not critical, and smaller wire will require longer tails.

The total length of the director element is about 4.7% less than the total length of the driven element. With the tail length difference shown in the chart, the gain is 5 to 6 dB, the front to back ratio about 15dB, and the SWR between 1:1 and 1.5:1. The antenna is very broad banded.

For the 15 and 20 metre X beams I mounted the arms on a 15 inch square piece of ⅜ inch thick plywood with pipe brackets. I used pieces of plastic hose to insulate the driven element arms at the hub. Pieces of 2 x 2 inches wood on the underside provided a mount for a 2 x 2 inches wooden stub mast. I used several coats of shellac to weatherproof the wood, and followed up with two coats of aluminium paint after completing the antenna.

For the 10 metre X beam, I bolted two 12 inch long pieces of ¾ x ¾ x ⅛ inches aluminium angle stock together to form the X hub. I fastened the arms (¾ inch diameter aluminium clothes line props) to the hub with worm gear type hose clamps, insulating the driven element arms with plastic hose.

Build the beam with longer tails than specified, but with the proper length difference. Mount the beam on a 10 feet pole for tuning. The resonant frequency of the antenna can be determined with a dipper coupled to the director (with a

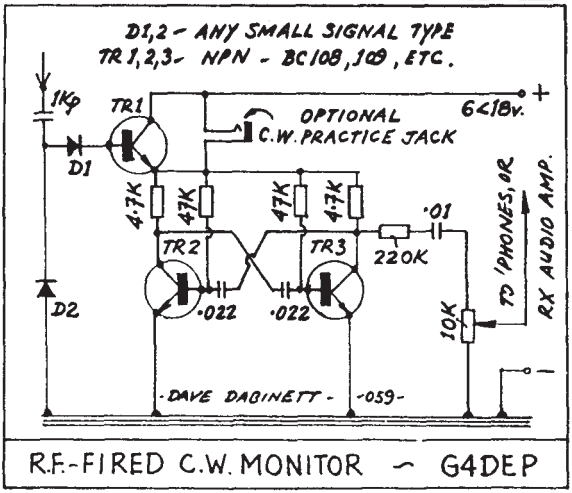


50 ohm dummy load on the driven element), or with a SWR bridge a few feet below the driven element.

If the resonant frequency is too low, trim one inch from all four tails (⅞ inch on 10 metres) and recheck resonance. Continue until the antenna is at the desired frequency. The resonant frequency will increase some when the antenna is raised to mast height.

X Beam Dimensional Chart

	Band	Arms	Driven Ele. tails	Director tails	Tail length Diff.
As tested	10 m.	6ft. 6in. (3/4 in. OD)	4 ft. 1 in.	3 ft. 7 in.	6 inches
As used	15 m.	9ft. 3in. (1",7/8",3/4")	4 ft. 10 in.	4 ft. 2 in.	8 "
Calculated Min. arm length	15 m.	8ft.. 5in. (1",7/8")	6 ft.	5 ft. 4 in.	8 "
As used	20 m.	13ft. 9in. (1",7/8",3/4",5/8")	7 ft. 8 in.	6 ft. 8 in.	12 "
Calculated Min. arm length.	20 m.	12ft. 5in. (1",7/8",3/4"/5/8")	9 ft.	8 ft.	12 "
Calculated Min. arm length	30 m.	17ft. 4in. (11/8",1",7/8",3/4",5/8")	12 ft. 6 in.	11 ft. 1½ in.	16½ "
Calculated Min. arm length	40 m.	24ft. 10½in.	18 ft.	16 ft.	24 "



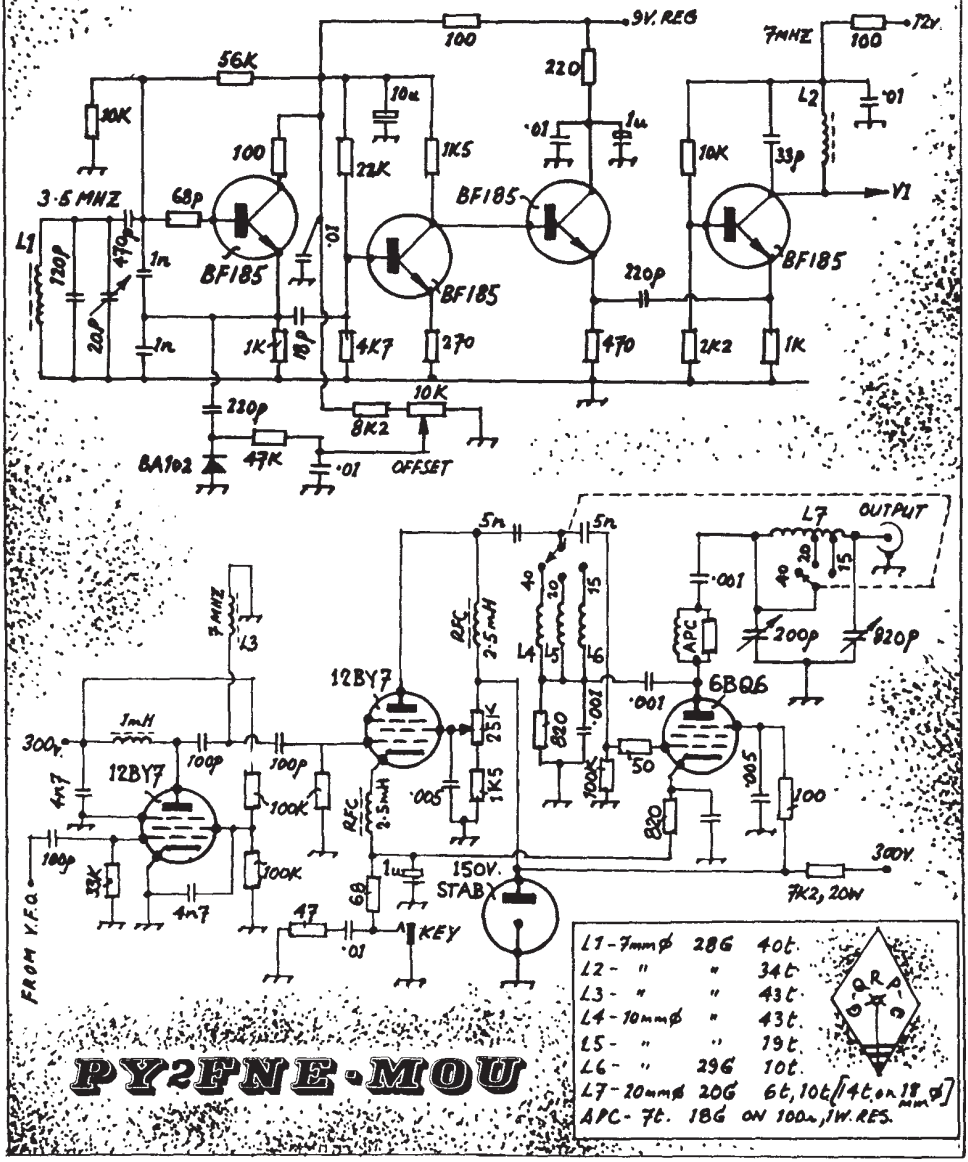
R.F.-FIRED C.W. MONITOR - G4DEP

This device picks up a sniff of RF which turns TR1 on in sympathy with your keying!! Use a throw out antenna or a few turns around the transmitter antenna.

The transistors are any NPN type, BC108/109 worked OK. The diodes are any small signal type. The monitor was found to work OK with QRP rigs, and several have been built by local club members of The Yeovil Amateur Radio Club. The LM380 Audio IC was found to make a good audio amplifier for it.

GRILO 3-BANDS TX

A 5-WATT HYBRID XMITTER FOR 40-20-15 MTRS.



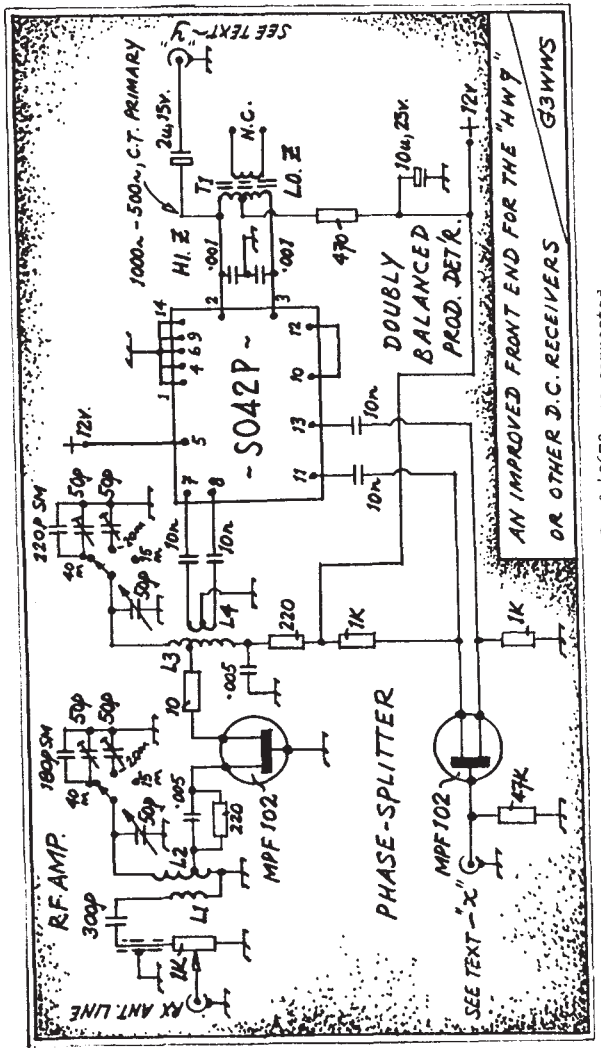
L1 - 7mmØ	28G	40t.
L2 - "	"	34t.
L3 - "	"	43t.
L4 - 10mmØ	"	43t.
L5 - "	"	19t.
L6 - "	29G	10t.
L7 - 20mmØ	20G	6t, 10t, [14t. or 18 mmØ]
APC - 7t. 18G ON 100Ω, 1W. RES.		

PY2FNE-MOU

Direct Conversion Receiver Front end

Mike Southall G3WWS

Working on modifications to his HW7, Mike decided to replace the mixer stage as outlined in the Doug DeMaw modification articles but was unable to obtain the required I.C. A siemens SO42P was substituted to the specification given on the device data sheet and the resultant circuit is shown in the drawing. Mike claims this front end works very well,has no hum, even with the notoriously 'hummy' HWA-7-1 PSU. Mike has added a couple of 0.01uF capacitors on T2 winding of the PSU, across each winding to earth. In the UK, the SO42P is available from Electrovalue Ltd for around £1.90.
There is no reason why this front end could not be used with other direct conversion receivers or form the basis for a home constructed receiver.



"x" to point in circuit where gate 2 of 40673 was connected
"y" to point in circuit where drain of 40673 was connected (AF out)

L1	2 turns 24SWG over L2 winding
L2	21 turns 24SWG on Amidon T50-6 toroid core (2uH), tap 7 turns up from ground
L3	Same as L2, except tap at 5 turns from C4/S1b end
L4	6 turns 24SWG centre tapped
T1	Submin. transistor o/p transformer, 100-500 ohm CT primary to 8 ohm, secondary not used.

All trimmers are miniature 50pF ceramic

The HW8 MacMod Squad

CONVERTING THE HW8 TO 18MHZ By Tom Sorbie, GM3MXN (Information by GM4JMU)

Firstly one must be prepared to give up 21MHz, but it can be changed back later, very easily.

1. Change the 29.895MHz crystal to 26.895MHz)
2. 10pF capacitor across C9 solder underside)
3. 10pF capacitor across C24 solder underside)
4. 10pF capacitor across C71 solder underside)
5. 6pF capacitor across C123 solder underside)
6. 22pF capacitor across C87 solder underside)
7. 22pF capacitor across C88 solder underside)
8. 38pF capacitor across C108 solder underside)

THEN: Tune up on transmit and receive.

I would think that 10MHz could be brought down from 14MHz in the same way.

NOTE: Tom has worked VP8ANT with this arrangement and an indoor dipole!

MORE HW8 MODS By Nor McIntosh, GM3RKO

The first mod I tried was the one suggested by EI8DA, he put a a 40673 in the front end. I did not have a 40673, so I used a 3N201 and it certainly made a difference, and was very noticeable on 20 metres. The 3N201 has a better conductance than the 40673.

I next tried the K6TG RIT mod which was successful apart from the fact the transmit, receive and net frequencies would not line up! I abandoned the "net" idea and settled for transmit and receive. Using a ten turn pot for the receive tuning and a suitable numerical dial I can easily zero on a station with the pot at 5-0, and tune both sides of him. If I want to come back to my net frequency I simply tune back to 5-0. It has worked very well over several months and the ten turn pot, although a luxury, gives superb slow-motion tuning. I tried the K6TG key click suppression mod and ended up with more key clicks than ever! I checked my wiring a couple of times and even ripped it out and started again, but did not get it any better. It was eventually abandoned and some decoupling hither and thither cut it down.

The scale on the HW8 I did not find much use. I certainly could not align all the bands to the scale using the built in calibrator. I expect the crystals are not exactly as said. I added a counter as part of the set up and take a feed directly from the junction of R49 (270 ohms) and R31 (100 ohms) to a coax socket on the rear of the chassis. The counter gives me a read out to 100Hz, so it is fine on any band.

HW8 MODS - Ex GM4HBG and GM3RKO

1. Change C1 (80 metres receive input) to 430pF.
2. Remove C4 (40 metres receive input).
3. From the secondary of L4 (15 metres receive input) remove one turn. This coil appears to peak on 18MHz!
4. Between pin 9 of IC1 (MC1496G) and C33 insert a 220µH RF choke. This removes a lot of hiss.

GM3RKO had problems with the band change switch causing loss of output power on 40 metres and 20 meters and microphonics on 20 metres. There was a young man from Gloucester who said "Gee, this'll cost ya" - so I removed the band switch and all associated PA output circuitry including the meter. A rotary two pole switch now feeds PI output networks via .01 capacitors (Ref: GM3OXX, Sprat and Solid State Design). No tuning takes place when bands are changed. The meter seemed pointless so was removed to make room for the WB switch. Power out appears to have decreased .1 to .2 watt per band, so? I saved £10 for a new switch so my ancestors will be proud of me!!

Converting the LCL 2740 CB to 10M FM

(Reprinted from Spalding Radio News).

This conversion of the legal 27MHz LCL 2740 CB is quite straightforward in that it is just a crystal change and re-tune job, as opposed to the method described in Short Wave Magazine. The new crystals that you will require are as follows:-

Crystal No. 2 RX change to 16.935MHz (These are available from
Crystal No. 3 TX change to 12.535MHz McKnight Xtal Co., Southamptor

This choice of crystal give the following frequency range :-

Channel No. 1 29.310MHz
Channel No. 30 29.600MHz
Channel No. 40 29.700MHz

As can be seen, this choice renders Channel 40 unusable as it is the band edge, but it does have the advantage that the channel frequency can be easily worked out, e.g. Channel frequency equals 29.3 plus channel number, thus the calling frequency is 29.30 plus 30 which is equal to 29.600MHz.

The only other component change to be carried out is to change C115 and C116 from 10pF to 47pF.

Method

1. Change crystals and capacitors as described above. Do not try to measure the crystal oscillator frequency direct as the frequency counter input capacitance will lower the frequency.

2. Put a DC voltmeter probe on pin 7103 and adjust the core of RX VCO L18 to get 2.9 volts on Channel 20. Then check on Channel 1, which should be approximately 2 volts.

3. Short out L8 coil on the back of the PCB. Switch to low power and using a SWR and dummy load, 'tie down' the mike in transmit position, and adjust the core of the TX VCO (L6) to give the following voltages on pin 7 of LC3 :-

Channel 1 - 1.95 volts Channel 20 - 2.6 volts Channel 40 - 3.5 volts

4. Still on transmit, adjust the cores of L9, L10, L11, L15 and L16 (L12 and L17 are not too critical). Then switch to high power and trim again.

5. Now back on receive, set to Channel 20, and trim L1 and L2.

Small Ads:

WANTED: Computer programs relating to amateur radio (QSLs,RTTY,Logs etc.) for 16K ZX81: John Elliott, VK3PEX,8 Queen St. Rosedale. Vic. Australia. 3847.

WANTED: KW Victor, DX40U,Panda Cub or sim. transmitter: G4GDR Swindon 762970. SOLD G4GDR A COMMAND RECEIVER? Adrian had one from a member and wants to pay for it but has lost the QTH, could the seller contact him pse on phone no. above.

FOR SALE: ARGONAUT 509, mint condx. £200, will deliver within reasonable distance of London. Tony Smith, G4FAI, 1.Tash Place,New southgate,London.N11 1PA. Telephone no. 01-368 4588.

FOR SALE: ARGONAUT 515 (8 months old, seldom used) £265. DATONG FL1 filter £40. DATONG RF1 Clipper £20. G WHIP 80-10M complete with coils and base maount (10-15-20 triband model with loading coils for 80-40) never been used £35. Ron Tandy, Fairmile,Daux Road,Billingshurst. West Sussex. RH14 9TF(0403-81-4416)

A REQUEST: ON1GR wishes to contact amateurs working in the ore mines, steel plants etc. Marc De Moor,Vredestraat 13,B-9720 De Pinte,Belgium.

MISSING KITS FOUND! In the QRP column in Rad Com G3RJV lamented the passing of the QP7 and QP21 QRP TX Kits. These are still available from: D.Taheny & Co. Ltd. 28-31 Market Street,Sligo. Ireland for around £(UK)12.

A Premix VFO for 10·1MHz & 14MHz

Matt Volkert DK4SQ

As it is rather difficult to build a stable VFO for higher frequencies, this circuit uses a low frequency VFO, which is heterodyned with a crystal oscillator.

The actual VFO covers 3.85 - 4.0MHz, which should be low enough for stable operation. The crystal frequencies are 14MHz and 18MHz. The mixer therefore generates 10.0 - 10.15MHz and 14.0 - 14.15MHz.

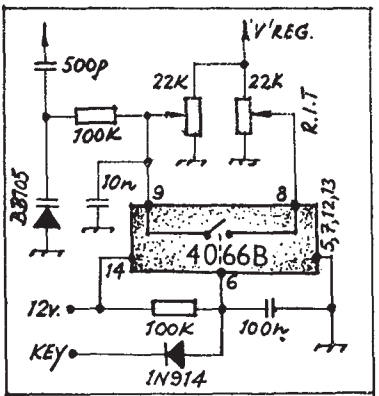
These oscillator frequencies are chosen for two reasons: First you can listen to all frequencies with your main receiver (if it includes the new bands). This is very helpful when you want to check the operation of each stage. Second 14.0MHz and 18.0MHz crystals are ready made available and quite cheap, although I must admit that the 14.0MHz crystal is not very common.

You may, of course, choose other frequency combinations than these if you have other crystals in your junk boxe or if you wish other output frequencies. It is recommended, however, that the crystal frequencies are above the desired output frequencies, as then the mixer image and the crystal frequency itself will be attenuated by your transmitter low-pass filter.

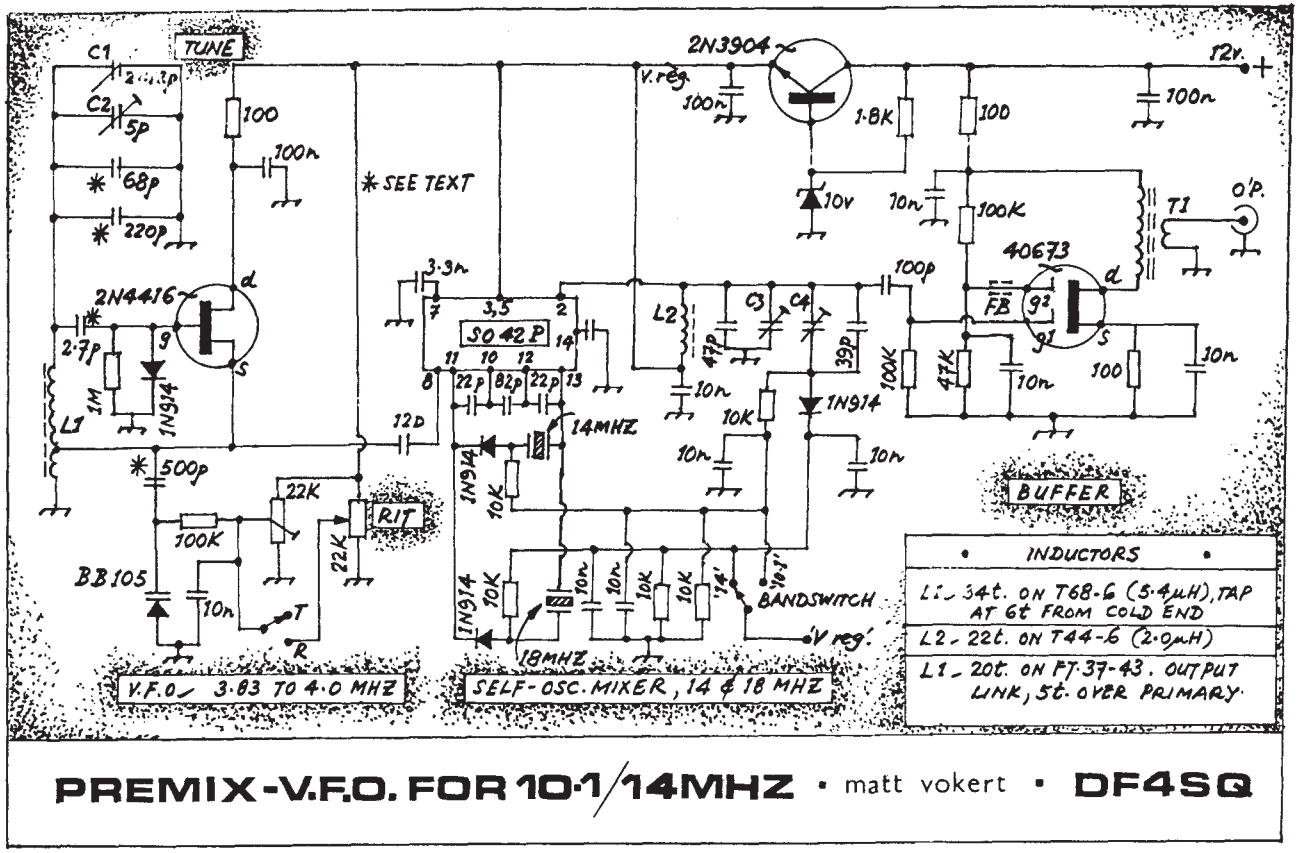
The actual VFO is a Hartley oscillator. The tuning capacitor, C1, is out of an old FM receiver, the two 12pF sections in parallel, C2 is used to set the band edge. All fixed capacitors marked with an asterisk should have a low temperature coefficient (NPO ceramic or styroflex). The varicap diode provides about 3KHz RIT. With the 22K preset you can set the transmit frequency. This should be preferably in the centre of the RIT range so you can listen on both sides of zero beat with your DC receiver.

The VFO signal is fed via the 12pF capacitor to the SO42P mixer. This balanced mixer needs only very few external components and is used in self oscillating mode. The crystals and the tuned circuit at the mixer output are diode switched. The switch itself may therefore be at any convenient place on the front panel. Notice that the switching is done by the regulated voltage regulator, otherwise there would be a noticeable frequency change when varying the voltage supply.

Following the mixer is a buffer amplifier which provides an output of about 1.2 volts across 50 ohms. When adjusting the tuned circuit at the mixer output, start with 14MHz (C3), and then tune the 10MHz trimmer, C4. Make sure that you do not tune to the image or other unwanted frequencies. If properly adjusted they are at least 35dB below the wanted signal.



NOTES:
1) Electronic RIT switching (break-in) may be used as per the insert circuit using the CMOS analog switch - 4066.
2) Some switching diodes may have a current so low that they are not adequately conducting which may give low output on 10.1MHz, if so change the diodes or use smaller resistors.
3) If less output power is required, the gain of the buffer can be adjusted by making the 47K resistor variable.



PREMIX-V.F.O. FOR 10·1/14MHZ • matt vokert • DF4SQ

More Ideas for Shortened Dipoles

Ben Johannson CT4CH

This is an adaption of a system that is often used to increase the efficiency of physically short antenna at commercial VLF stations. Many QRP operators who, like myself, have to use indoor antennas may not be aware of its possibilities.

The following calculations outline the principles. If a hlaf wave dipole is shortened to one quarter of its full size, the radiation decreases by a factor of 16. In a full size dipole the radiation resistance is 73 ohms, and in the shortened version it drops to 4.6 ohms. To make the dipole resonate we have to introduce loading coils (Fig. 1) and if we assume the losses from the coils and other factors to be 10 ohms, this works out atan efficiency of 32%. This means that only one third of the power fed to the dipole is radiated.

If we now place a similar loaded dipole in parallel with the original dipole (making a folded dipole as in Fig. 2), the radiation resistance increases to 18.4 ohms, the losses increase to 20 ohms (10 x 2), and the efficiency increases to 48%. Suppose that we then add a third loaded dipole in parallel with the first two, making a three wire folded dipole. This will increase the radiation resistance to 41.4 ohms and the loss resistance to 30 ohms (10 x 3). The efficiency will now be 58%, representing approximately 3dB more radiated power compared with the signle wire version. The bandwidth will also be considerably increased.

Note that if we only shorten the dipole to half its full length the difference between the two wire and three wire version is not so great and a two wire version may prove adequate. The three wire version has exciting possibilities however, as it would allow indoor or balcony operation with a dipole only five metres long for 40 metree, or 80 metre operation from a small garden only 10 metres long, although at 80 metres the bandwidth would only be about 30KHz. Note also that high voltage developes at the ends of a shortened antenna, so if QRO is used indoors, sparking to nearby earthed objects could take place!

In making my experimental model the following method was used. A single wire version was made up with the loading coils located half way between the centre and the ends. The coils were then adjusted with the aid of a GDO until the dipole resonated at the correct frequency. Two further dipoles, physically similar, were then made up and connected in parallel with the original dipole and each spaced 3cms from it. When the three wire dipole was grid dipped it resonated high, so a short, single length of wire was attached to each end, and these pieces of wire were then trimmed to bring the antenna into resonance at the desired frequency (Fig. 3). Should the antenna resonate too low in frequency, the three wires can be each trimmed 1cm at a time until resonance is achieved, or the size of the coils can be increased. Matching in my case involved using a 4:1 balun to step up the impedance of my 50 homs feeder. This

FIG.1.

FIG.2.

FIG.3. (X = Trim for resonance)

was indoors, where impedance tends to be unpredictable owing to the influence of the building. Outdoors at a reasonable height direct match to a 50 ohm feeder might be possible.

This article is designed to encourage those with restricted space to experiment with a system the possibilities of which they may not be aware of.

Annexure: The calculated efficiencies for dipoles reduced to one half of their normal size, and assuming loss resistance of 5, 10 and 15 ohms are :-

single wire 78% Two wire 88% Three wire 92%

This underlines the increased advantages of the system for really short dipoles. Note that I have found that using shortened dipoles as indoor verticals has not been satisfactory; in my case horizontal polarisation always gave better results.

Editorial Notes: It might be possible to further reduce the size of the loading coils and thus the losses, by connecting three wires together at each end via one of the "spokes" of a conventional cart wheel type capacity hat. Also, at least in my experience, indoor verticals do not work well, as Ben says, but this system seems to offer very interesting possibilities for short, outdoor monoples. Just take one half of the system, erect it vertically and work it against a good ground system - G8PG.

In this system the lossier the coils, the greater the improvement obtained by adding more wires, a curious paradox! Furthermore, if one inserts a term into the equation for losses other than those from the coils, the relative improvement of adding more wires becomes less. The idea of using a capacity hat is certainly one that should be explored. I am puzzled about the problems of using indoor verticals as CBers seem to get out on them! The system now needs a good "on the air" trial, and I hope that Ben can conduct this and let us have his results - G3DNF.

CORRECTIONS AND ADDITIONS TO HELICAL ANTENNA ARTICLE BY CT4CH IN SPRAT 36.

1) The capacitor in the matching network should have been across the input.
2) Alternative method of matching:On 15m it is possible to use a 4:1 balun (50 ohms in 12.5 out) between feeder and antenna eliminating matching network.
3) A simple way of resonating the antenna is to cut one or more of the wires connecting the spokes of the capacity hat connecting each end of the antenna together. Each time this is done the resonant frequency is increased.
4) With the capacity hats fitted the small coils described in the original article are not now needed on 15m.
5) If a 20m version using 2x120 turns is constructed and fed via tuned open wire line all 5 amateur bands between 14 and 28MHz can be covered by suitable tuning of the feeders.
6) As printed in SPRAT the diameter of the capacity hats may appear as 58cm, it is actually 50 cm.
7) Who will be the first to use this idea for a miniature 2 el. beam?

AGCW-DL QRP/QRP ACTIVITY PARTY - 1st MAY 1984

The only G to take part last year was Gordon, G3DNF, our Chairman, who notched up 2nd place in Class A! Details of the 1984 event are as follows: 1st May. 1300-1900GMT. 3500-3600 & 7000-7040. CW only. Classes: A - max. 5W input or 2.5W output. B - max. 25W input or 12.5W output. Points: Contacts with Class A=1, Class B=2. Multipliers: each DXCC country. Total Score = sum of points x multipliers on each band. Exchanges: RST/SERIAL/CLASS (559 001/A) Call "CQ QRP". Logs to: DF5DD, Nastholter Str 16, D-4780 Lippstadt, Federal Republic of Germany. Send an irc if results are required.

G2NJ TROPHY 1983.

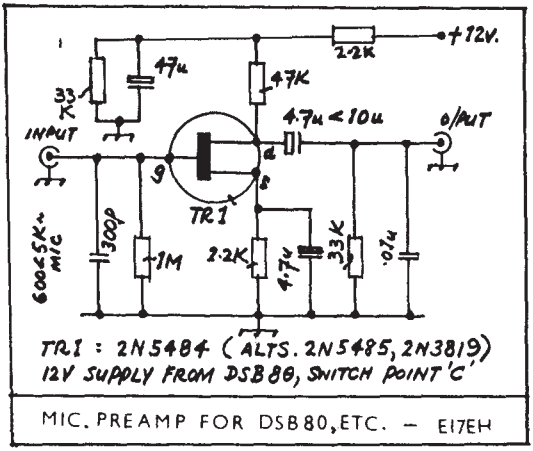
The trophy will be awarded for the best QRP DX log covering 1983 submitted by a member. In awarding the Trophy the committee will take into account all the circumstances, including available antenna(s) etc. Logs to G8PG as soon as possible.

We regret to announce the death of Alan Roughley, G4HCP, member 1280 at the age of 52. Alan had a heart attack training for a charity marathon. Alan was constructing equipment up to the time of his death. His close friend, Bill, G4KKI (1130) informed us of Alan's death. He leaves a wife and 2 daughters.

Some Impressions of The DSB80

by EI7EH

Reprinted from Newsletter of The Irish Radio Transmitters Society.



While QRV on 80 metres with the DSB 80 at Achill Island operating /P, a call into the Sunday 12 Noon News produced a 5 x 4 report from Paul, EI2CA among others. The antenna was a 200 feet random wire plus ATU a few feet off the ground. It was interesting to note that the Dublin stations using 80 metre dipoles were the strongest signals heard on the DSB 80 at Achill. With no AGC on the DSB 80, it is very easy to tell a genuinly strong signal from an average or weak one - it blows your head off!! That evening GD was easily worked on DSB with a 5x7 report. The DSB 80 as built, and using a 600 ohm dynamic mike (the best found up to that time) appeared to be at its limit on phone during the midday hours owing to high signal absorption. Nevertheless good results have been obtained with best DX being OK land on DSB with a 4x7 report at 11pm.

A very substantial improvement in depth of modulation has been produced by changing recently to a preamplified ceramic mike, the Astatic D104, with 5000 plus impedance. Reports are consistently 3 or more 'S' points up on comparison with the dynamic mike To confirm the usefulness of added mike amplification, a FET pre-amplifier was built (circuit below) and incorporated behind the mike socket on the DSB 80, with a switch to by-pass the aplifier for comparison. The circuit is for 600 ohms input and 5000 plus ohms output. Again reports using this amplifier have been amazing when using the 600 ohm dynamic mike, even in heavy QRM at night. With the amplifier switched out stations the DSB 80 signal diving into the noise. With the Astatic mike, over modulation occured and its gain was reset to 55%. It is calculated from these tests that a mike gain of some 70dB is desirable to achieve full modulation of the DSB 80. Taken in conjunction with EI3DY's experiments, it is clear that microphone impedance match and amplification are critical.

DSB 80 builders may like to note that the station at the South Dublin Radio Club, EI2SDR, is frequently QRV with the DSB 80 on Tuesday evenings (club night) and would very much welcome call ins. The frequency is around 3750MHz.

Editor's Note: When sending in the above article, Michael Staunton, EI3DY said that The Irish Radio Transmitters Society, with a view to promoting home construction, arranged for a bulk purchase of DSB 80's. In all 31 were ordered for members, and are in various stages of construction and operation. It is believed that about 40 kits have been purchased in EI land. The DSB 80's can be heard calling into The IRTS News on Sundays at 1200 and 1230 GMT on 3650. It is possible for two DSB 80's to work each other, despite the phase problems associated with resolving DSB on a DC receiver. Michael describes DSB on a DC receiver as sounding like "arctic flutter".

WINTER SPORTS 1983

QRP GOES TO SEA !

When GM3OXX reports " only worked one QRP W " it might seem that things were not good during the Winter Sports, but this was far from true. Despite difficult conditions on the hf bands logs show activity from over 20 countries, and there was much ragchewing and renewing of old friendships on all bands. And this year we had our first /MM/ QRP participant ! Sailing in the S.S. "Traviata" and using his second call, SM6YF/MM, our old friend Ben of CT4CH fame took QRP afloat with a lw, 21 MHz rig that he had not even had time to test before sailing. Operation took place from such romantic places as off the coasts of Portugal, Gibraltar, Algeria, Malta, Crete, and Egypt, with a final close down as the ship was about to enter Egyptian waters. (Ben continues on to Japan, but will be too busy with shipboard duties to allow further QRP). Best QRP/QRP DX worked was WB2RZU (who else!) from the vicinity of Gibraltar. Another outstanding contact in the DX line was made by Brice, W9PNE. Running 5w he worked G3GIR on 3.5 MHz on December 30th. Brice also made it QRP/QRP with G3BOK on 21 MHz. Despite bad conditions and influenza Karl, SM4KL, worked many QRP stations including giving Ben a contact with his home country. The really encouraging thing is that despite bad conditions dozens of QRP/QRP contacts were taking place. Roll on next year !

AWARD NEWS

BROKEN NECK QRP AWARD

To the gallant G8DV. Requirements are to have broken your neck, be strapped to a hospital traction bed, and to still carry on operating QRP cw. Joe did just that!

QRP MASTER AWARD Congratulations to G4JFN, No.16 .

SILVER TERN AWARD Congratulations to K9PNG, No.4 .

QRP COUNTRIES 100 KH6CP; 50 G4CSM,SM7KNM; 25 G8QM,GI4MBO, G4NNJ.

WORKED G QRP CLUB 240 (!!) GM3OXX, 180 G4BUE, 120 OK1DKW, 60 G4MIJ, 20 KH6CP.

TWO-WAY QRP AWARD No issues this period.

CW NOVICE AWARD TO BE EXTENDED The Club will extend this Award for a furthe year because of its success. It is open to any newly licenced station, member or not, who makes cw QSOs with 50 different station during his first year on the air. QRP and QRO classes. See the Winter 82/83 issue of SPRAT, page 18 for full details.

LARGE HORIZONTAL LOOP ANTENNAS

Will any member using a reasonable sized horizontal loop antenna please let G8PG have details, including on the air results, so that information can be corelated with a view to publication.

DAILY ACTIVITY PERIODS.

Many members seem active during the week, so we are introducing experimental weekday activity periods. These will be 1130-1230 clock time on 7030, with 3560 as an alternative if skip is long.

QRP DX From Grand Cayman

Fred Bonavita W5QJM

The whole thing just didn't feel right.

I mean, there have been many stories in the various ham magazines about DXpeditions. Lots of pictures of small armies of men ferrying crates of equipment ashore through the pounding surf at some exotic spot in a well-financed operation that captured headlines for months afterward.

Yet here I was, waiting my turn in the customs queue at the airport at George Town, Grand Cayman, B.W.I., where I was about to launch my own version of a QRP DXpedition from that Caribbean island.

Instead of being flanked by hordes of hams, I was all alone on that score (my family was along for an early winter vacation). All my gear was packed neatly into two briefcases held in my hands. In my coat pocket were my license (ZF2AL) and an authorization to bring my gear onto the island - and take it off with me when I left a week later.

The customs officer couldn't have cared less what I had in the briefcases. He gave them and my import authority a cursory glance and waved me through. Instead of an HW-8 in there, I could have had an Argonaut 515, and he wouldn't have known the difference let alone cared.

Such was my introduction to hamming on a semi-rare DX island. It got worse.

I'd made an almost last-minute decision to take my ham radio gear along on the family's pre-Christmas holiday for 1983, and I had to do some rushing around as a result. I was able only to notify a handful of QRPers that I would be on as ZF2AL for seven days. Next DX spot for me will be planned a little more in advance and a little better.

For one thing, I wrote to the ARRL for an application for a reciprocal license. Back came the application form, the import authorization for my gear and instructions to send the authorities $25, which I did.

I was stunned about a week later when my personal check was returned with a note that it was unacceptable. So I fired off a U.S. postal money order by return mail (that was OK, the letter said) and held my breath, since I was to leave for Grand Cayman within ten days.

Much to their credit, Caymanian authorities outdid themselves and got my license to me with about four days to spare! Very close.

It would have helped in planning, too, if I'd known the layout of the Holiday Inn where we were to stay, but since that was not to be, I had to plan for the worse. The place turned out to be U-shaped, with the open end pointing out to sea to the west.

We were on the third floor of the four-storey inn, and our balcony looked into the interior courtyard and to the north toward the U.S.

Unfortunately, we'd arrived just after dark. We went to out rooms and

unpacked. While the family scouted out the hotel and beach, I quickly hunted up the bar, fortified myself and set about hanging my antenna - an inverted vee 33 feet on a leg and fed with 300 ohm line through a tuner.

I hung the feedpoint via chin nylon line from my balcony, dropping the legs to the ground below. It was dark enough that no one noticed - or cared - that I was running around in the garden below, pulling the ends of my antenna up into conveniently placed palm trees. In fact, I made it through the whole week without so much as a peep from the management about the wires hanging from the third-floor balcony.

Having got that far successfully, I got greedy and wanted to hoist my vee from the fourth-floor balcony overhead, giving me another 10 feet of altitude and a better shot out of there. My efforts to climb out on the railing and hook my lines through the railing above to pull up the antenna failed. I'm not a great one for that trick without someone to hold to my belt.

So I went to the room above and knocked on the door. A woman, who refused to open it, heard me explain my request but refused to help me. It later turned out the couple on the fourth floor was on its honeymoon. So I got my nephew to climb out, hook the ropes in the balcony above and pull my antenna higher.

The honeymooners apparently were too busy to notice.

I hit the air first thing next morning on 40 metres, working into states along the U.S. Gulf Coast. My first QRP contact was with Gene, N5DDV, in Jackson, Miss. Since I was on the air as early as 1100 GMT while it was still dark in the Caymans, I was operating from a small table between the bed and the balcony door. Having rigged my HW-8 with silent break-in keying, I was able to operate while my wife slept.

In addition to my HW-8, I had an outboard MFJ CWF-3 active audio filter, a Ten-Tec 227 tuner, an MFJ-820 QRP SWR/watt meter, a Ten Tec KR-5A keyer and a one-amp power supply, which I sat on the nearby air conditioner (in December yet) to keep it cool.

My main focus was for QRPers, so I adopted a calling method of "CQ QRP, CQ QRP, CQ QRP DE ZF2AL QRP PSE KE." I would call that twice and then put out a general CQ to anyone. With but one exception, operators honored my call for QRPers. A W4 in South Carolina, I think, refused to budge until I'd worked him. I did, but I promise you he isn't getting a QSL card.

I drew lots of favorable comments from other stations about the strength of my 1.75 watts output. Unfortunately, I was able only to work into the U.S. for the first six days. The wing of the hotel was between my antenna and South America, where some folks were listening for me.

The only decent opening to Europe came on Saturday, Dec.24, on 15 meters, and just as I got into it with on ON4 in Belgium, the family decided it was time to hit the beach.

Since this was a family holiday, I could not spend as much time at the key as I would have liked.

I also had problems with nearby station - hams, CBers in taxicabs and boaters - whose signals frequently swamped the receiver in my HW-8 and left me straining to hear the incoming CW stations. A more sophisticated receiver and filtering system probably would have helped.

My pint-sized DX operation was fun. I didn't generate any massive pile-ups, although I had several stations calling me many times. I was able to provide a new country for several and that's always a pleasure.

All my QRP contacts got specially endorsed QSL cards from ZF2AL, and I probably qualified for a few KM/W Awards. As soon as I can find great circle charts to calculate distances, I might apply for some.

The bottom line was about 100 QSOs in 27 states and one other foreign country. Not too shabby for the first time out. But it's also not the type of DXpedition you read about the the major ham mags.

After all, what's so sexy about a solo operation where the gear arrives in two briefcases that fit under the seat in front of you on the plane?

Lower Power 1984 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 15 April, 1984, 0700 to 1100 gmt and 1300 to 1700 gmt.

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

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

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

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

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

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

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

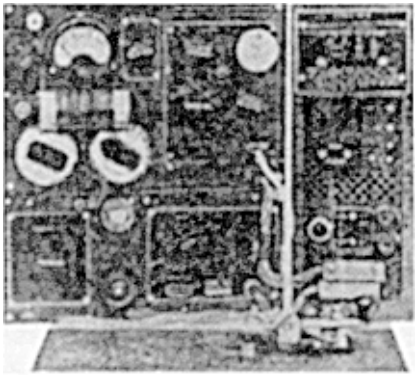
11. *Address for logs:* RSGB HF Contests Committee, c/o Mr. N. S. Cawthorne, 10 Wilton Grove, New Malden, Surrey KT3 6RG, England.

12. *Closing date for logs:* Logs must postmarked not later than 7 May, 1984.

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.

G QRP CLUB successes in the 1983 RSGB Low Power Contest included: In the 5W class, 1st;G8DV, 2nd: GM4HBG. 1W class, 1st: GM3OXX. Overseas class, 1st:DF6FO.

DOING ANYTHING ON AUGUST BANK HOLIDAY? Each year the Town and Country Festival at the Royal Showground in Warwickshire has an amateur radio section, we would like a full club stand this year. Its a good event for all the family and you can camp or caravan on site at reduced rates, and get you and your family into a great family event at no cost if you work on a stand. Interested? Let G3RJV know.



It's in the SUITCASE.... COMPETITION

"It has for a long time been my contention that the rapid development of 'suitcase radios' between 1938 and 1945, mainly for wartime clandestine purposes, played an historically significant, yet seldom fully recognised, role in the evolution of portable, low-power hf radio communications overs distances of hundreds of miles" wrote Pat Hawker, G3VA, in the February 1984 Radio Communication. A full account of the development of these fascinating items of equipment can be found in G3VA's excellent series "Clandestine Radio - The Early Years" Wireless World, January/February 1982. (Also see Wireless World for Feb. 1984)

Prompted by G3VA's articles and recalling that 1984 is the 40th anniversary of the Normandy Invasion, Rich, G5CSU, suggested a club contest inspired by the SOE Suitcase Radio era. A similiar suggestion was made to me by G5DEH based upon the more recent covert radio operation during the Falklands conflict.

THE G QRP CLUB ARE TO SPONSOR A COMPETITION AS FOLLOWS:

1) Build a transceiver (or transmitter or receiver) using modern techniques.
2) Package the equipment in a small suitcase,briefcase or other common object.
3) The power supply and accessories should be included in the main packaging or some other similiar housing.
4) Proof is required of the functional viability of the equipment and should take the form of a log of 10 QSOs in the case of a transceiver or transmitter or 25 amateur stations heard in the case of a receiver. Include a signed declaration that the competition equipment only was used for the log entries.

SUBMIT to G3RJV, before December 31st 1984:
a) a circuit of the equipment b) notes on construction and housing
c) the log as above d) if possible, a good contrast black/white photograph.

A small keepsake trophy will be awared to the best entry in each class (TRX,TX,RX) Judging will be based upon circuit elegance/effectiveness/simplicity of duplication original and novel packaging etc.
Miniaturisation, although useful, is not essential. Many members are keen on prtable operation so it is hoped that the competition will produce useful design ideas for publication in SPRAT.

It is hoped that Pat Hawker, G3VA, will assist in the judging.

STOP PRESS NEWS.....
The HEATH COMPANY has discontinued production of its popular HW-8 transceiver and will shortly announce the HW-9.
In letters to U.S. amateurs who have inquired about the HW-8, officials of the company have said, "The HW-8 is no longer available. In our next catalogue we will be advertising a new transceiver, Model HW-9, and we think this will be available in April."
Heath has declined to make advance information on the HW-9 available. However it is expected to match the newly introduced

LAST MINUTE NEWS.....From W5QJM, the new HW9 will be: 9MHz if superhet rig for 80/40/20/15 (options for 30/19/12) same size as HW8,RIT, bandpass tuning, 4 stage active filter but no crystal filters at all, QSK, 5 watts output the estimated price is in the $(US) 250 range (with extra bands about $300)

MEMBERS NEWS: Chris Page G4BUE

ALAMOSA, THE PADDOCKS, UPPER BEEDING,
STEYNING, WEST SUSSEX.

I am writing this at a college, where I am nearly half way through a six month course in connection with my work. Hence the reason you have not heard my call on the bands during the last couple of months. That, together with the fact that my 60 feet tower and DX34 (four element tri-band beam) came down during The CQ WW CW Contest at the end of November. I was particularly annoyed as during the Saturday I had used my little STX transmitter to work KP4, UH8, UA9, and quite a number of East Coast USA stations. I finished the contest using a G5RV hung at 30 feet just below the TV antenna, and managed to work a W on 14MH with it and the STX.

To remind me of happier times I have used a photograph of me operating as G4BUE/W5 at the QTH of Leo, KC5EV and Sharon Delaney. Leo has just been appointed Awards Manager to The A.R.C.I., so congratulations Leo. To those of you who would like to meet Leo and Sharon (and the whole G-QRP-C gang come to that) make sure you plan a trip to Birmingham for The RSGB HF Convention at the end of April. Leo and Sharon are due to arrive in The U.K. just prior to the Convention and will be there over both days. Let's make them feel at home.

Last week-end (ARRL CW Contest week-end) I got my new tower up and the new beam on top. It is the same antenna as I had previously, but as a result of reading the antenna books I have lengthened the boom from 21 to 28 feet and altered the spacing of the elements. During the Contest on the Sunday I worked East Coast U.S.A. with an input of 3mW on 28MHz, 5mW on 21MHz and 7.5mW output on 14MHz, so I guess the new modifications are working well. How nice it was to hear so many QRP stations making use of the best conditions for ages during that Contest. On the question of Contests your attention is drawn to The ARCI April QSO Party between 1200 21 April and 2400 22 April on CW only. The contest follows the usual ARCI scoring and logs should go to Contest Chairman, Eugene C. Smith, KA5NLY, 16 Fairmont Drive, Little Rock, AR 72204, U.S.A. This contest creates a great deal of CW activity from USA stations on the QRP frequencies and they are always very pleased to work other QRP stations from Europe.

As a result of recent week-day activity on 7030 and 3560, The Club have decided to try an additional activity period on week-days on the above frequencies, between 1130 and 1230 local time. Let me know how it goes.

Does any member want a TS120V and PSU in daily use and in good condition? G3KRR has one and would like to exchange it for HW8 and PSU. He can be contacted at Hockley 203771. Ha-Jo, DJ1ZB has been working in Argentine for 3 months and sends a very interesting letter of what life is like there. He said the bands appear almost empty out there. WB1GMH is working RTTY with QRP with a Vic 20. John has had some surprising results during the past year, including XT2AU. He would like to hear from other members interested in using QRP for RTTY. G3BFR is running a Ten-Tec Corsair at 2½ watts output for QRP and was pleased to work Andy, WB2RZU in The Winter Sports. Frank mentions the frustration of receiving QSL cards without the magical words "two-way QRP" thereon.

G4MIJ was pleased to make his first two-way QRP contact across the pond with a W3 over a 45 minute QSO. Nothing like doing it in style Rod. Rod also mentions that he, SMØFSM and OK2BMA have now notched up over 100 hours of QRP QSO rag-chewing. Dave, GM4ELV is looking for another Argonaut or similar, he has around £200 available. Dave sends an impressive list of 12 contest achievements using QRP over the last five years. G4GDR recently hooked ST2 for a new one. Adrian is building a 'Pipsqueak' transmitter for 160. Believed to be the first OXO built in the U.S.A. goes to Brian, N5BA in Texas. Brian has worked W6 and W8's with it and says he has taken up pipe smoking to get the tins to make the output filters!!

Ben, CT4CH, who has been sigining SM6YF/MM from the begining of the year, is now back home in Portugal for a while. OK1DKW dropped a line to say that he has been very busy constructing. Petr has built an accu-keyer on a PCB and with his set-up now has a "CW machine" with all of the options. He has also built the DJ1ZB Lagos QRPeter. In January he went to Moravia to visit Pavel, OK2BMA where he tried Pavels HMW8 (Home-brew HW8!).

George, G3RJV has had several letters from members asking for the Top Band frequency to be changed from 1850, as not all countries have that frequency, and also it is used by some of the DXers. Perhaps some of our regular users of that band would like to suggest a frequency we can use for QRP. Finbar has received several queries regarding his Force Three rig which recently appeared in Sprat. He would be pleased to hear from any members who have built the rig or who are having problems with it and invites them to write to him direct. At the same time Finbar asks if any members have information on EMP protection for QRP gear.

SM4MNT has recently moved to a flat on the third floor and has been using an indoor antenna. He will put one up out of doors as soon as the ice and snow go away! G4EHU has a FL2 Datong filter with PSU for sale, mint condition at around £70. Bill says he has sold all of his QRO gear, and is just keeping the 509 and 405 Argonaut range. He has been operating Amtor mode A and B for a couple of weeks with the 509/405 set-up and is active most mornings between 1000 and 1200 on 14073. He would like any members with a similar interest to get in touch with him. G4JFN has recently worked a few new ones including 3B9, SV5, YV and FY7 for his Masters Award and is now going all out for DXCC. F9YZ worked the recent VU7 DXpedition, and is just waiting for a QSL card from an EA9 for a 3.5MHz QSO to follow GM4ELV for five band WAC/QRP.

G4DQP has been QRT for the last 12 months, but is now back looking for members. Brice, W9PNE is chasing the last few countries (on QRO - sh!!) for five-band DXCC, and describes his absence in The Winter Sports to being frozen in temperatures of minus 15 degrees!! G4SGF gives advance warning that he will be in Malta, using the call ZB2MD later in the year, between 2 and 16 July from his father's (ZB2GR) QTH. Ken will be using his modded ICB1050 (Sprat No. 34) and will be looking for other QRPers. Bill, G5CMX is now N8ET having been transferred back home to Ohio. Bill has two 100 feet towers on which are going 5 elements on 20 and 3 elements on 40 metres. Guess we should be hearing you Bill!! WB2EUF has been working mobile CW with a Hustler antenna and home-brew gear. Ken offers any assistance to U.K. amateurs having problems getting hold of USA gear for projects, etc.

G8PG has been playing antennas. Gus has been trying out a horizontal loop, about 60 x 20 feet and about 16 feet high, feeding it in a corner with open-wire through a Z match. Gus says "it has gone like a bomb from the start...", and describes some nice QSOs on 3.5 through 21MHz, including HH2VP. G4KKI is building a 7MHz transceiver based on the SCD design and PW7, plus a couple of ideas of his own. In between building, Bill has been QRV on 7MHz with his OXO, which was built by member G4HCP just before he died. Bill would like to hear from any members using The Lowe SRX30, to exchange ideas about it, etc. KH6CP/3 has now worked 25 members and Zack also recently worked W7EL who was using his 2 watt transceiver described in QST. Let us give a round of applause to Bill, G4EHT. He has just taken on his local Planning Authority by appealing against their refusal to allow him to put up a 30 feet Versatower with a HQ1 beam on top. Bill won the appeal and will no doubt be trying the tower and antenna out by the time you read this.

A QRP DXpedition by Fred, W5QJM to Cayman during the week prior to Christmas where he operated as ZF2AL was both rewarding and disappointing. Fred was only able to work one ON station in Europe with his inverted vee on a 20 feet hotel balcony, but made QSOs with 26 USA States with his HW8. The AGCW Winter QRP Tests were received with mixed feelings. Bob, G3IQF made 55 QSOs, his best so far. Bob's DXCC is now at 105/80. G3DNF described it as a "strage business" referring to the direction in which signals were being received. He worked many USA/VE stations on 21MHz. I stuck to 14MHz with the Argonaut and G5RV, but found it heavy going, and rumour has it (nothing confirmed yet) that GM3OXX was giving a serial number in the 70's near the end of the Contest!

That's it for this time, hope to see as many of you who can get to Birmingham, but in any case let me know how your Spring goes (by 15 May please). Don't forget the Club's Spring Activity Periods, details in last Sprat.

Best 73,

Chris Page

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NEW 160-15M QRP TRANSCEIVERS

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A new range of rigs in build-it-yourself form incorporating refinements and additions over the DSB80. Now available for any individual band from 160M through to 15 metres (including WARC bands). Utilises the MINISYNTH simple PLL VFO (available separately) for complete coverage of each band. Features include semi break-in keying (relay controlled), 2 watts min. CW or DSB out, on board active filter, bombproof VMOS PA, +12v operation, mic gain control, sidetone for CW (via VFO), and on-board provision for a digital readout for any of the bands. The sensitivity on receive is more than adequate for general communications, with high dynamic range, utilising an encapsulated double balanced mixer at the RF input.

THIS PROJECT IS IDEAL FOR BEGINNERS or QRP enthusiasts, and comes complete with comprehensive instructions/drawings, and typical voltages. The DSB2 Kit comes complete with all components, pcb (drilled and tinned) with component positions screened on, and connecting wire. The pcb alone is available if the complete kit is not wanted. You will need a microphone, key, antenna and power supply (+12v @800mA) to get you on the air. WE ALSO HAVE A CASE, drilled and punched but plain aluminium panels for your own finish. It comes complete with hardware (connectors, knobs, sockets, brackets, dial plate, nuts/bolts etc).

PRICES:	BASIC DSB2 Kit (no VFO)	**£42.00**
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PLEASE STATE BAND REQUIRED i.e. DSB2/160 (or 80/40/30/20/17/15M).

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