QRP Quarterly

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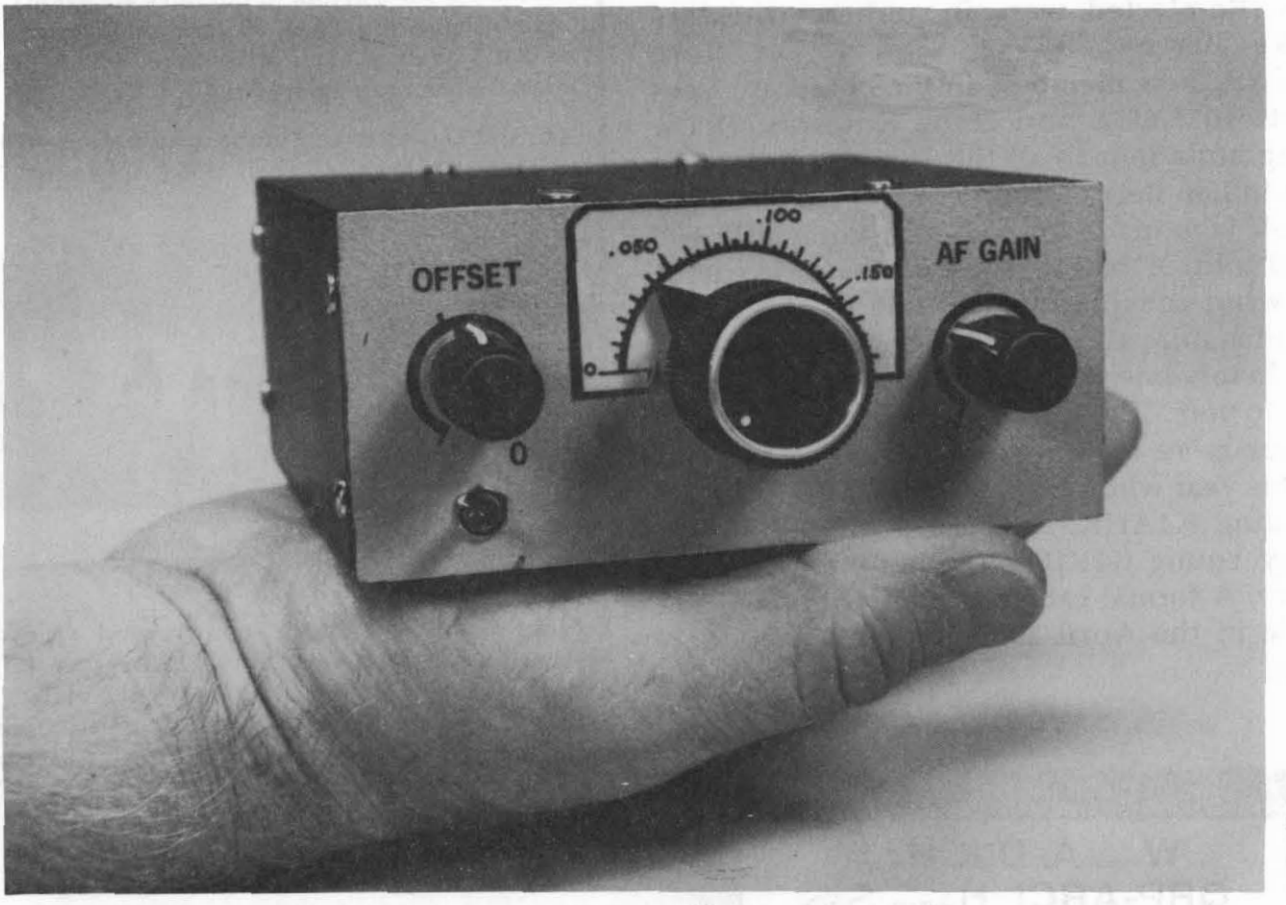


A powerful handful—one man's version of the W7EL "Optimized QRP Rig." See page 4. (Photo by WA1NPX)

Fall CW QRP Contest
Summer Daze Contest
Results start on page 11

QRP ARCI NEWS

Election Results For Directors

Balloting was completed in Novemeber for four vacancies on the club's Board of Directors. Re-elected were incumbent directors Mike Bryce WB8VGE and Roger Rose W5LXS. New members to the board are Cam Hartford N6GA and Doug Stivison NR1A. Congratulations to all the winners and thank you to Lou Berry KF5OW and Luke Sheridan NB3V who made the balloting competitive.

All told, 97 ballots were cast, a rather poor showing considering the size of the active membership. However, the board appreciates the involvement of those who made the effort to vote.

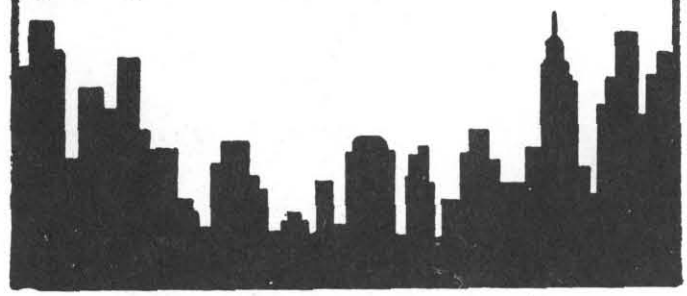
Four more openings will occur at the end of this year when Danny Gingell K3TKS, Bill Harding K4AHK, Fred Turpin K6MDJ and Terry Young K4KJP complete their terms of office. A formal call for nominations will be made in the April 1989 issue of The Quarterly.

If you worked the QRPers in Dayton last April, you qualify for this nifty certificate. Details are on page 10.

Make plans now for Dayton Hamvention April 29-30 and Dallas June 3-4.

Myron Koyle N8DHT is handling room reservations for Dayton. Room rates are $36+tax for single occupancy and $42+tax for double occupancy. Contact Myron at 1101 Miles Ave. S.W., Canton Ohio 44710 for more information.

For the Dallas event, more information will be forthcoming in the April 1989 issue of The Quarterly.



Preston Douglas WA2IFZ contributed a product review of the Digitrex Mini Transceiver in the October 1988 issue of The Quarterly. The manufacturer's address was inadvertently omitted from the article. Contact the Digitrex Electronics Company at 1689 W. Hamlin Rd., Rochester Hills, Michigan 48309 or call 313-853-3232.

Mike Czuhajewski WA8MCQ needs a current address for WA1GUV in Vermont who ran QRP in the 1988 CW Sweepstakes. The 1988 and 1989 Callbook address in Huntington, Vermont is invalid. Send info to Mike at Box 232, Jessup, Maryland 20794.

Computer buffs can find a subsection devoted to QRP on the Maryland Radio Center bulletin board. The BBS is up 24 hours a day at 301-725-8307. It can handle 300 and 1200 baud. Danny Gingell K3TKS and Mike Czuhajewski WA8MCQ have been putting stuff on it for several months, but no one has been reading it! So give it a call sometime.

The QRP ARCI is a non-profit organization dedicated to increasing world-wide enjoyment of QRP operation and experimentation. QRP, as defined by the club, is 5 watts output CW and 10 watts output PEP.

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Building the Optimized QRP Transceiver

by Bill Wawrzeniak, W1KKF
5 Shire Drive
Wallingford, Connecticut 06492
Photos by Al Alvareztorres

Soon after I finished building the "Optimized QRP Transceiver," designed by Roy Lewallen, W7EL, I realized it was one of the most fantastic rigs I have ever used. It has proved so much fun that I seldom turn on my TS-820 at home, preferring to run this fine QRP rig instead.

It gets great signal reports, and working DX on the low end of 40 meters is easy. I have logged more than 30 countries and have taken first place on 40 meters in three QRP ARCI-sponsored contests with it.

This rig was built primarily for use on camping trips, since I am involved actively with the Boy Scouts. It has accompanied me on five such outings and a family vacation to Nebraska. The rig is very considerate of batteries, drawing only 18 mA on receive and 400 mA keydown on transmit. And I have developed a take-along antenna (see accompanying article).

Rather than build this transceiver from a kit (1), I went the homebrew route. I skipped the designer's "squashed" technique and opted instead for separate boards for each main function. Only the transmitter has an individual printed-circuit board of my design. More about that in a moment. The other stages are tightly packed on perf boards in what I call "cordwood construction."

Double-sided, copper-clad PC board makes up the case, with the bottom, front and back soldered together as the main frame. The top and two sides attach to the main part of the rig with screws mated to brass nuts soldered to the inside of the box. The VFO is in its own copper-clad PC board box for rigidity and temperature stability. Details of construction techniques can be seen in the accompanying photographs.

The whole thing measures but 4-3/8ths inches square by 2 inches high. It was spray painted flat black, with silver front and rear panels and rub-on letters to identify the controls.

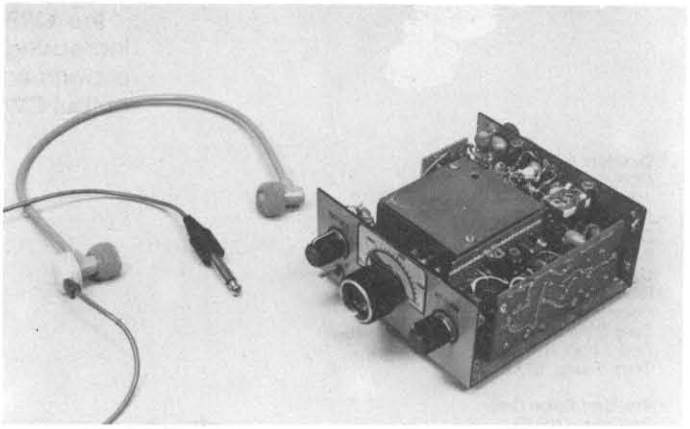
I made three major modifications to the original W7EL design: the transmitter, the sidetone oscillator and the detector stage. Builders are urged to read thoroughly Roy Lewallen's original article in the August 1980 issue of QST and his follow-up article in the October 1987 issue of The QRP Quarterly for a better idea of now this rig works.

TRANSMITTER

I found some inexpensive, plastic transistors for citizens' band rigs and decided on an output of 3 watts instead of the 1.5 watts in the W7EL design. Not being a QRPer when I built this rig, I didn't have the faith in low power I now have. And since I have tasted QRP, I feel the 1.5-watt level should be fine.

For a better understanding of my version of the transmitter section of this transceiver, builders should also read Chapter 2 of "Solid State Design for the Radio Amateur" (DeMaw and Hayward, ARRL). And my methods of designing broadband ferrite transformers can be found in Section 2.12 of "W1FB's QRP Notebook" (DeMaw, ARRL).

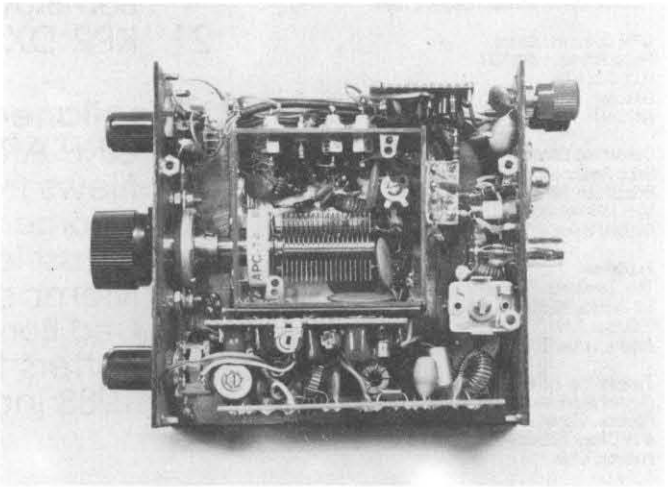
A word of caution: I used the HEP-S3044 for my power amplifier, but those units are no longer available. Motorola made them as replacements for the Japanese-made 2SC2028 final for citizens' band transceivers, and I have not found a source for those either. The following are listed as replacements for the 2SC2028: RCA SK3253/295. Sylvania ECG-295 and the NTE-295. A local distributor (2) stocks the latter for $3.20. These all have the easy-to-use TO-126 package.



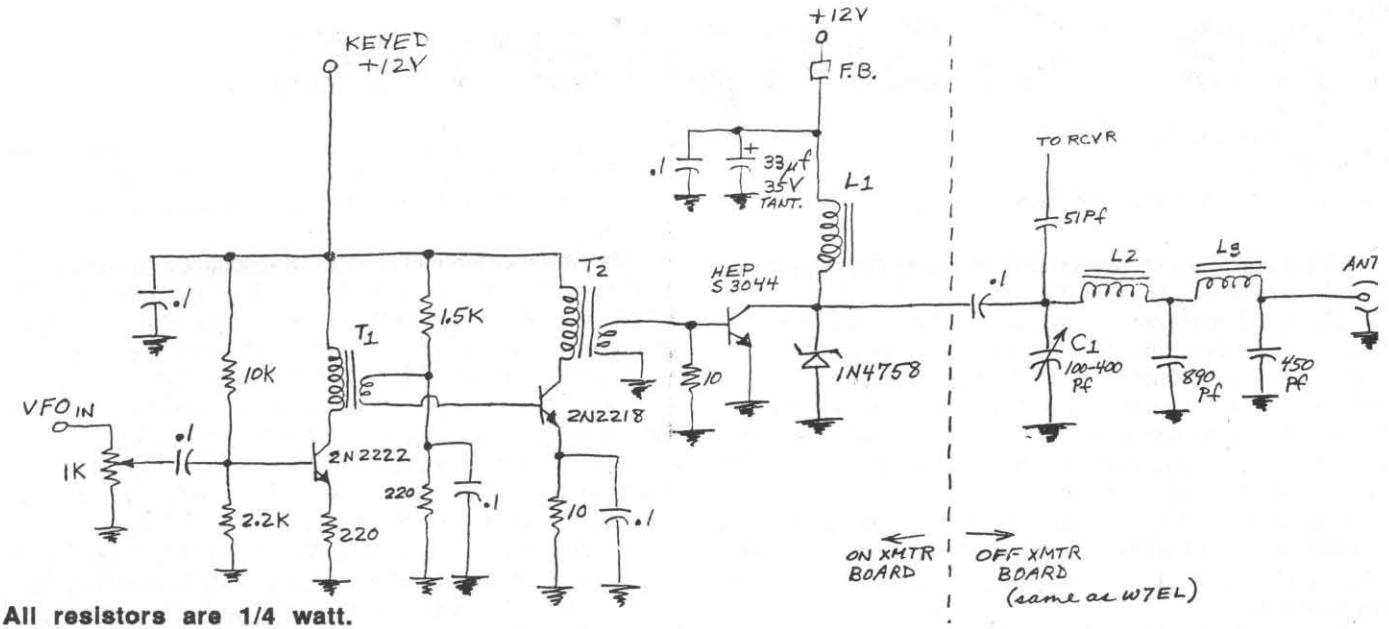
With its cover removed, W1KKF's version of the W7EL rig shows how well placed the various boards are. The transmitter board is at right, and the VFO is inside the shielded compartment at left.
WA1NPX Photo

The final is driven by a 2N2222 and a 2N2218. which will need a heat sink as will the final. Since the heat sink in the final is connected electrically to the collector lead, caution must be taken to make sure the sink touches no other part of the transmitter.

A printed-circuit board is not required for the transmitter. It can be built on perf board. There is no pattern available for the transmitter PC board I designed, but it is straight forward and ought to offer no problems for the average builder. I laid out my version with a direct-etch method using rub-on transfer pads by DATAK and resist tape applied directly to the double-sided board. Following the advice of Doug DeMaw, I made the component side of the board a solid ground plane. I covered it with masking tape prior to etching.



It's all in there. This professional-looking interior was easy to handle, according to the author. On the back edge of the VFO compartment is the SBL-1 doubly balanced mixer, soldered in place.
WA1NPX Photo



All resistors are 1/4 watt.
All .1 caps are 25 volt disc. ceramic
C1=mica compression trimmer
F.B.=ferrite bead FB73-101
L1=2µH, 22 T no. 22 enamel on T50-6 core
T1=broadband xfmr, 20 primary turns #26 enamel wire on FT37-43 ferrite core. Secondary is 2 turns #26.
T2=broadband xfmr, 7 primary turns #22 enamel wire on FT37-43 ferrite core. Secondary is one turn #22.
2N2218 has a press-on TO-5 heat sink
S3044 has a screw holding a free standing aluminum H.S. approx. 1 square inch area.

When the etching process was finished, I used a No. 60 drill to make holes for components on the foil side. I then used a 1/8ths-inch drill to countersink all holes in the groundplane except those where components are grounded. Grounded leads are soldered on both sides of the board.

SIDETONE OSCILLATOR

One secret of making contacts is answering a CQ on the calling station's frequency. To do this, I set my sidetone frequency and receiver offset to the same frequency as the peak of the audio filter—in this case, 675 Hz. I marked the offset pot on the front panel for 675 Hz and set the frequency of the sidetone the same. Now it's a simple matter of matching the calling station's audio tone to the sidetone frequency and voila! Zero beat.

However, if the sidetone isn't a sine wave, it's very difficult to match the tones. I initially built the W7EL-designed sidetone on a breadboard and found it does not produce a sine wave. I think it produces square waves, which are the most difficult to match for this purpose. I opted instead for a Twin-T oscillator, which will produce a nearly pure sine wave output if the gain of the transistor and the values of the collector resistor and matched feedback resistors are selected properly. Use of an oscilloscope makes this task easier.

THE DETECTOR

The AM detector problems described by W7EL are really severe at this location, with Radio Moscow the prime culprit. This happens most evenings from 8-10 p.m. Eastern Time. Radio Moscow is in the low end of the Novice band, and since my rig tunes from 7-7.18 MHz, I can't filter it out. The Russians are so strong that I have measured 0.4 volts, peak-to-peak, on a 50-ohm load connected to my antenna.

Luckily. the first transistor out of the junk box produced a beautiful sine wave. I tried others and saw some distortion, but I think that was caused by higher gain from the transistor. Perhaps a high-gain transistor would work with some negative feedback in the emitter.

I tried many cures, and switching to a Mini-Circuits SBL-1 singly balanced mixer helped. See the accompanying photographs for my mounting trick (hint: it's soldered to the rear wall of the VFO compartment). While the advantage of the SBL-1 is small, I nonetheless recommend using it. The best Radio Moscow filter turned out to be a ground-mounted vertical for receiving.

The only other advice I have is the use of U.S.-made NPO capacitors in the VFO. I learned the hard way, after installing Japanese-made NPOs, that the rig drifted significantly about 1,500 Hz in the first hour! After putting in U.S.-made capacitors (in this case, Soragues), the drift was reduced to about 150 Hz. Doug Demaw's Oak Hills Research is a good source of quality NPOs. (For a copy of their catalogue, send a business-sized s.a.s.e. to 4061 North Douglas Road, Luther, Michigan 49656.)

I have found that even with the higher output, I can operate this rig on a weekend camping trip with ten AA NiCad batteries. At home I use a power supply and a G5RV antenna at 60 feet.

Footnotes:

(1) Circuit Board Specialists, PO Box 951, Pueblo, Colorado 81002.

2) Trontown USA. 1213 Old Colony Road. Wallingford, Connecticut 06492.

The Camptenna

By Bill Wawrzeniak, W1KKF
5 Shire Drive
Wallingford, Connecticut 06492

While constructing my version of the W7EL Optimized QRP rig for use on camping trips and vacations, I was struck with the fact I had no equally portable antenna to take along.

I needed something that would be lightweight and efficient. I ruled out random wires and longwires, since they generally require an antenna tuner, and that only adds weight. Every pound on your back feels like five. Antenna tuners also have some losses, and with QRP levels, I wanted to get every ounce of signal into the air I could.

Random wires require a good ground to work against, and it's difficult to take along a ground rod and sledge hammer while hiking. Without a ground system, a random wire is not very efficient.

That left the dipole, and while it is an efficient antenna, I was put off by the prospect of carrying 30 to 50 feet of RG-58 coax, since that would not only add to the weight of my pack but would consume vital space. Smaller-diameter coaxes, such as RG-174, were ruled out because of their power losses.

But what about using a parallel feed system like twinlead? True, twinlead is low loss and lightweight, but we are back to the need for an antenna tuner again. Then it hit me: an exact half-wave length of 300-ohm TV twinlead would present the antenna impedance (in this case, 50 ohms) to the transmitter. Suddenly I had an antenna that would be lightweight, would take up little room and would get as much of the signal in the air as possible.

Since my rig is a 40-meter, CW transceiver, my frequency of interest would be from 7 to 7.05 MHz, with 7.025 as the center. I calculated 57 feet, 5 inches of 300-ohm twinlead would be a half-wave length (formula: length in feet equals 492 divided by the frequency in megaHertz times the velocity factor of the twinlead, in this case, 0.82. See the ARRL Handbook for velocity factors of other balanced lines).

So I bought 65 feet of inexpensive TV twinlead and stretched it out in my back yard. I connected a 50-ohm, noninductive load across the two leads at one end and to the other end I attached an SWR bridge through which I fed the signal from mv rig. Using a convenient tree, I hauled the dummy-load end of the twinlead into the air, using monofilament fishing line.

My first measurements showed resonance (lowest SWR) to be below 7 MHz, so I lowered the line, trimmed off a few feet, reconnected the dummy load, hauled the whole thing back into the air and tried again. After a few tries, I got the SWR down to 1.1:1 at 7.025 MHz. Just what I needed!

Then I made a center insulator out of a piece of Plexiglass and attached the antenna to it. I used PVC-covered No. 22 stranded wire for the radiator. The half-wave dipole formula (length in feet equals 468 divided by the frequency in mega-Hertz) indicated an overall length of 66 feet, 7-1/2 inches.

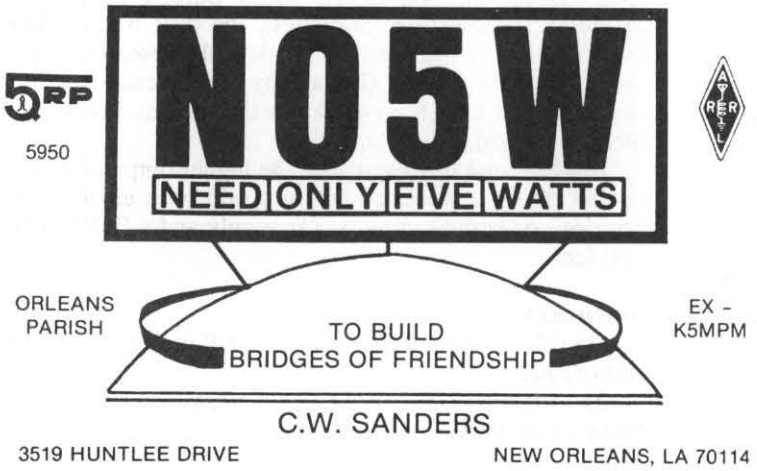
I discarded my dummy load, connected the twinlead to the antenna leads at the insulator, hauled the whole assembly back into the tree and started measuring again. I went slightly longer on the length of each leg of the radiator and trimmed equal amounts from each end until the SWR readings reached the level I was looking for again. The final version measured 1.2:1 SWR from 7-7.05 MHz and less than 2:1 in the novice band.

I had my camping antenna.

What about the unbalanced transmitter output connected to a balanced feedline? This is not a problem. Louis Varney. G5RV, proved the balanced feedline matching section of his famous antenna did indeed have balanced currents in it, even though it was connected to a coax feedline. The rig end of my feedline has one lead connected to the center and the other lead to the outside shell of a coax connector.

I try to hang my antenna as high as possible so as little of the 57-foot-plus feedline touches the ground. Then I place my operating position at right angles to the antenna, again trying to keep the feedline off the ground. I have succeeded in getting the antenna up as much as 40 to 45 feet and have draped the feedline across a convenient bush.

This antenna works well. I've made as many as 14 contacts (some were ragchews) in 24 hours and have worked Europe with it — all from a campsite deep in the woods and running only 3 watts output.



What are the odds that a QRP'er will get the perfect QRP-style call letters assigned to him or her? Chuck Sanders has no qualms about letting the world know that he "Needs Only 5 Watts!"

Milliwatting and Microwatting
An Alternative Method for the 1990s.

By Christopher J. Page, G4BUE
"Alamosa", The Paddocks
Upper Beeding, Steyning
West Sussex, England BN4 3JW

With the increase in sun spots and better conditions on the HF bands, I have been turning to "milliwatting" and "microwatting" again. These are the terms given to working DX with milli- and microwatts.

My article in the July 1981 QRP Quarterly described the method I used during the last sun spot high for milliwatting. That system was based on accurately measuring input power, but since then we have gone over to output power. I have made several references in my Members News column of Sprat, (the journal of the G-QRP-Club), to the Welz RP-120 meter, which I purchased at Dayton in 1986. The lowest setting is very good for measuring output power, as it has 200mW on fsd, but it is difficult to accurately measure below 5mW. After my results during the last sun spot high I am now confident that with well designed and efficient antennas DX QSO can be made with much lower power levels, well down in the microwatt range. Some alternative to my RP-120 meter had to be found of accurately measuring these very low power levels of RF. In addition none of the dealers at Dayton this year had any of the meters, so it may be that Welz have stopped making them.

Whilst in the flea-market at Dayton I purchased an Allan Industries Inc. stepped attenuator, model 50TA82-5 for $20. The unit is 50 ohms impedance and is capable of inserting up to 82.5dBs of attenuation in steps of 0.5, 1,2,3,6,10,20,20 and 20dBs. 81dBs attenuation of a 1 watt signal represents 7.5 nanowatts of RF, which I considered more than enough for my purposes!

The unit is very well constructed and testing it against the Welz meter, it would appear to also be accurate, i.e. halving the output power with each 3dB inserted. I have fitted the attenuator to my 515 Argonaut, and by using the Welz meter can accurately set the drive to provide 1 watt out. It is now an easy matter for me to insert the appropriate amount of attenuation to obtain the desired output. I have made up a small chart which I keep by the Argonaut, showing my output power in relation to the amount of attenuation. I can now quickly and accurately decrease my power from 1 watt to virtually any power level, e.g. 250mW (6dB), 976 micro watts (30dB) or if I am feeling really ambitious and confident, 953 nanowatts (60dB)!

One problem I have encountered is that by inserting the attenuator in the antenna lead, the received signal is attenuated as well as my transmitted signal! This is not a problem if the received signal is 599 from a big contest station, but doesn't help with the average QRP signals. Some form of relay to switch the attenuator out during receive will have to be designed.

My first QSOs with the attenuator were on a very rough 15 meter band at the beginning of August. I worked WB2LEM with 3dB (500mW) and K2LE with 6dB (250mW) of attenuation. Nothing remarkable, but it showed the attenuator was working. My Summer QRP Party the following week-end coincided with the WAE CW Contest, and contests are always a very good way of making QRP contacts. Carlo, PA3DWZ was one of the three Dutch QRPers staying over the week-end, and after all the other guests had departed we settled down to do some serious milliwatting.

It was great fun to listen to a USA QRO contest station continually making contest style QSOs, while we called him with gradually less attenuation until we finally got through. 20 metres was the only band still open and I had never been able to make milliwatt QSOs on that band during the last sun spot high. I later discovered this was due to my antenna, as after re-designing my four element tri-bander on to a bigger boom (30 feet), I was able to cross the Atlantic with levels down to 5mW and once with about 1mW, as measured with the RP-120.

I am confident that given the right conditions and efficient antennas, microwatts (and possibly nanowatts) can be used to make DX QSOs.

We first of all worked KQ3F at 15dB (31.25mW), and then K3WW and N2GZL at 20dB (about 10mW). By then the band was going out and it was necessary to go back to a full watt to make QSOs. Two interesting points come out of these QSOs. First, whilst making these QSOs we called several other well known contest stations who were the same strength as those we worked, but they did not hear us. I suggest this is because they were using high power to achieve their loud signals whilst the stations we worked were using good antennas and skill in receiving ability. The second point is that, in theory at least, you do not need a big beam to go milliwatting. I like to think my yagi has a .orward gain of something like 8dB on 20 metres, and assuming that's to be about right, that means that if I had been using a dipole instead of the yagi I should have been able to work K3WW and N2GZL with 20 - 8dB = 12dB = 62.5mW.

I may erect a simple dipole to see how much the theory differs from the practical.

The purpose of this article is to try and persuade you to give milliwatting and microwatting a try, hence my reason for writing it at this early stage before I have seen with how much low power I can make DX QSOs. As I mentioned earlier, I am confident that given the right conditions and efficient antennas, microwatts (and possibly nanowatts) can be used to make DX QSOs.

I will report again in due course.

In the hope that this article has stirred your interest in milliwatting, I can hear you saying, "but where do I get an Allen Industries Inc. attenuator from?". I cannot answer that, but what I can suggest is turning to the ARRL Radio Amateurs Handbook. Pages 25-42 of the 62nd edition (1985) describes the construction of a low power step attenuator of 50 ohms impedance with the ability of switching in up to 60dBs (953 nanowatts on one watt). I should like to hear from other members who have tried milli- and microwatting, especially those who have used different methods.

Upgrading the Ten-Tec Argosy Revisited

By Cornell Drentea, WB3JZO
7140 Colorado Avenue North
Minneapolis, Minnesota 55429

(Editor's Note: Cornell Drentea, WB3JZO, caught the attention of many owners of the Ten-Tec Argosy transceiver with a very thorough and impressive article in the November 1986 issue of "ham radio" on upgrading and improving the analog version of that popular QRP/QRO rig. Most of his modifications apply also to the digital version, the Argosy II.

(In this article, Cornell updates his upgrade with additional improvements and some corrections to the original piece. This article makes no effort to reprint the original piece, and readers are urged to read it as a basis of the following.

(The QRP Quarterly is pleased to offer this article as part of its continuing program of keeping members and readers current in developments in low-power Amateur Radio communications, and we appreciate the cooperation of the author in preparing this.)

Since the original version of the upgraded Argosy story was accepted by "ham radio," I have made a few additional modifications. A few errors crept into the printing of the piece, all of which I will detail here.

One important mod I made after the piece appeared is that I doubled the number of high-voltage Schottky diodes (Hewlett Packard 5082-2800) in the mixer, increasing their number to two per leg, all matched, for a total of eight. These substitute for D-12, 13, 14 and 15 on the RF/Mixer board (80784). This results in better current handling and better dynamic range (DR).

I also increased the output of the first injection to about +22 dBm with the help of a couple of Motorola MWA-320s and a small Class A amplifier configuration. By hitting the mixer harder, I improved the upper limit of the DR by a noticeable factor. What's important here is that the rig's preamplifier seems to be so crunch-proof that the mixer can be improved.

If you contemplate this modification, the buffered VFO should be fed to the receiver mixer but not the transmitter mixer, which should use normal VFO levels picked up prior to the buffers. This is accomplished by separating the paths to the two mixers on the RF/Mixer board (80784). Good results can be obtained without the buffers, however.

To lower the noise floor, I strongly urge use of the KVG XF-910 monolithic filter in the bfo line (see below) if one cares about reducing the noise floor further. It will clean phase noise created by the "pulled" bfo. To realize the improved specifications of the Argosy, the four-pole crystal filter in the set must be replaced with something much better.

Here are some problems and solutions encountered with the Argosy and the original article in "ham radio":

PROBLEM: The magazine omitted the value of the resistor from the r.f. gain pot to ground in Fig. 7. According to Ten-Tec Technical Note TN2-525, this value should be 10,000 ohms. However, using this value permits the pot to function only over 40 percent of its range. Lowering the value to 470 ohms increases utilization to 60 degrees of travel. This is still not a satisfactory range, but other rigs have a similar problem.

In the Argosy, this is caused by the fact the r.f. gain control works in conjunction with the limited agc voltage applied to the MC-1350 i.f. amplifier. Because the agc response of this device is very non-linear, the effective r.f. gain range is only 1.5 volts (5 to 6.5 VDC). Consequently, this makes use of a very small portion of the pot.

SOLUTION: By inserting at 10,000-ohm fixed resistor from +12 VDC to one end of the pot and another 10,000-ohm fixed resistor from the other end of the pot to ground, the pot acts as a fine-tune control which will provide the desired 5 to 6.5 VDC to the junction of the two diodes. (See Fig. A) Much more pot range can be used with this network than with the TN2-525 approach.

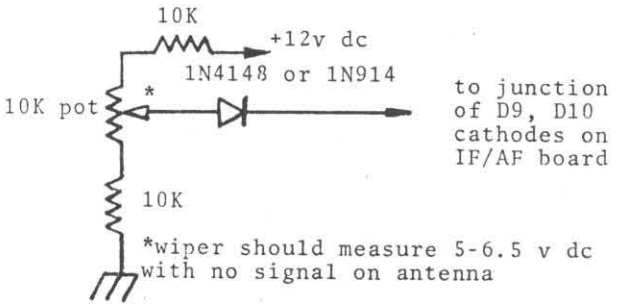


Fig. A

PROBLEM: Depending on the device used for the product detector in your Argosy (some variations have been reported), the source impedance of the a.f. low-pass filter utilizing the 470 millihenry (not microhenry, as "ham radio" reported) filter can be off, resulting in a loss of gain for weak signals.

SOLUTION: In the interest of gain, a 5,100-ohm resistor can be substituted for the 10,000-ohm resistor (R47) at the input of the filter. Lowering this value even more (e.g., 4,700 ohms) will provide more gain and perhaps better matching in some cases, but IMD products in the product detector may be increased substantially. This will mainfest itself through adjacent channel interference and in other ways.

It has been reported some early Argosys were designed around the MC-1496 active mixer in the receiver. This early idea is responsible for very poor dynamic range. Ten-Tec redesigned the rig with a passive diode mixer in receive, while maintaining the MC-1496 for the transmit section, which is OK. However, the mixer modification suggested in my original article will not benefit such early versions without additional redesign of the entire front end.

CW operators may want to cascade two filters for the IF/AF board (80785) for a total of three filters. This is accomplished by offsetting the plug-in board toward the back of the

transceiver. Results indicate the insertion loss of two extra filters (with design specifications of the filters I used in the "ham radio" article) exactly matches the gain of the amplifier on this board. Four filters (24 poles) have been cascaded with "razor-edge results" but with slightly excessive insertion loss. To compensate for it, a 10 dB i.f. stage has been inserted between the last two filters and is activated with the push of the "Xtal In" button.

Comparison of an Argosy with cascaded 2.2-kHz Raytron filters versus an unmodified rig with the Ten-Tec 500-Hz CW filter showed the modified version to be superior when using all Raytron filters and all audio filters. It was concluded that four Raytron filters were preferred over the lossy 500-Hz Ten-Tec filter, since they provided four distinctive and progressive degrees of filtering which adapted equally to CW and ssb situations. (Sometimes too narrow a crystal filter is not desirable if one listens to several signals at the same time.) The audio filters in the Argosy are as good as crystal filters, anyway.

These modifications account for an improved two-tone, third-order 20 kHz spacing spurious-free dynamic range (SFDR) of a measured 112 dB with all filters plugged in. The noise floor equals -138 dBm, and the blocking dynamic range (BDR) at only 5 kHz from the interfering carrier — with all filters — is a spectacular 150 dB.

Several letters have been received regarding utilization of the KVG XF-910 i.f. noise-reduction filter in the Argosy and other Ten-Tec equipment. Insertion of this inexpensive monolithic filter according to the manufacturer's suggestions directly in the i.f. chain of the Argosy or Corsairproduced no improvement. (For current prices, see ads in major ham magazinesby the filter's manufacturer, Spectrum International.) However, one solution is to replace the 24 pF capacitor through which the BFO is fed to the product detector (the dual-gate FET) with the KVG FX-910 monolithic filter. As mentioned at the outset, this prevents the BFO phase noise components, caused by the pulling of the crystal oscillator too much, from getting into the audio to a great extent. It also helps the 470 mH filter perform better.

It was impossible to make significant measurements of the noise floor below the -138 dBm level because of r.f. "wrap-around" leakage in the test equipment. However, Jack Wheeler, KH6CC, has done this mod to his Corsair and reports that noise dropped to 0.18 volts from 0.68 volts (an added 11 dB improvement) across the audio output at the phone jack. I have performed the mod in my Argosy with outstanding results. (Jack also reports being able to "pull" the original BFO crystal oscillator within the required specifications in his Corsair in conjunction with the KVG 9MHz filters.)

ADDING AN AGC SWITCH AND TIME CONSTANTS TO THE ARGOSY:

Some users have requested information about wiring an AGC switch in the Argosy. Such a switch can help in situations where intense atmospheric noise of 20 dB or more over S-9 takes over the gain of the receiver to the point small signals will be attenuated. Another common situation is when a strong, in-band CW signal takes over the gain while the operator is trying to copy a weak signal.

There are several ways to wire an AGC switch into the Argosy. A popular method is to unsolder D-9 from R-26 on the IF/AF board (80785) and wire in a switch. A preferred method is to bring one side of R-58 to the switch with the other side of the switch grounded as shown in Fig. B. This also allows switchable time constants if a three-position switch is used. A 50 mF tantalum capacitor will maintain smooth transition between strong ssb stations with a release time of 4 to 5 seconds, further minimizing "popping" in some situations.

Since there is no space available on the front panel of the Argosy, the new AGC switch can be mounted on the right side of the rig and accessible through a slot cut in the cover panel -- a very handy location. The switch and time constants work in perfect harmony with the RF/AF gain control described in the original "ham radio" article. As with any other rig equipped with an AGC-off function, the user should turn down the RF gain control prior to switching the AGC off. Reduced RF gain (S-9) should be used with extremely strong signals to minimize the last drop of "popping" tendencies.

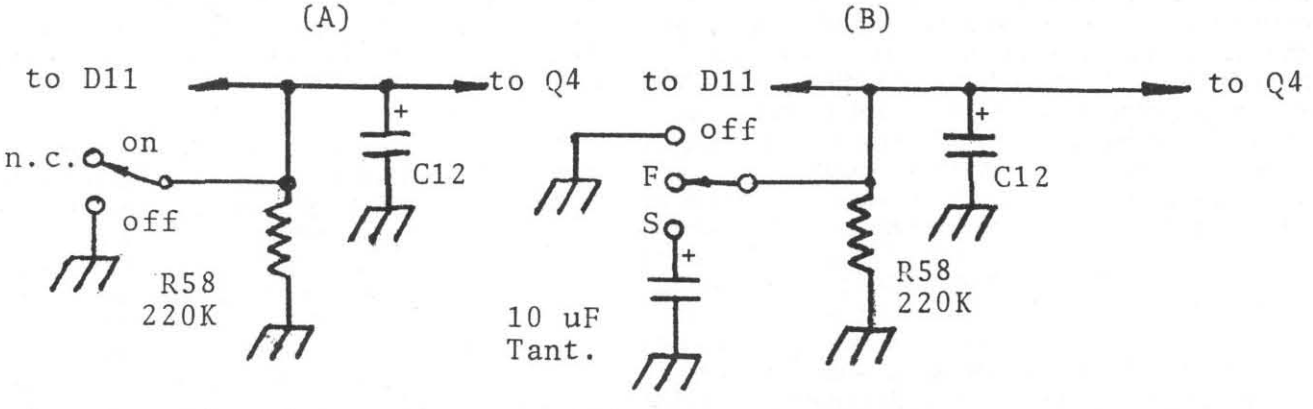


Fig. B: AGC modifications on AF/IF board (80785). At (A) is a simple AGC switch, while (B) shows a circuit with fast (F) and slow (S) time constants.

News from the Hospitality Suite ...and a New QRP Certificate!

by George Dorner, W9ZSJ
P.O. Box 8251
Rolling Meadows, IL 60008

We all dream of expeditions — DX, Field Day, backpack, on a cycle. The time, the cost, the bother, maybe even the XYL prevent most of us from realizing such dreams. The 1987 Dayton Hamfest gave some QRPers the opportunity to participate in a ready-made expedition with a site in the hospitality suite of the Downtown Days Inn (formerly the Belden Inn) in downtown Dayton.

When I walked into the suite on Friday evening, the antenna was up and the rig was plugged in. The antenna was a 40 meter delta loop which hung from the eleventh floor window to light posts on the ground last year. I saw it as we exited the expressway, and I had resolved to have at least one QSO from the suite during the weekend. The same antenna and toroidal balun, provided by W1FMR, were there last year when I had watched a few operators putting QRP ARCI on the air from Dayton.

The first operator in action this year was Ade Weiss, W0RSP, who had set up his portable station-in-a-box consisting of an Argo 515, power supply, and keyer. Later, I got a kick out of using a rig which belonged to the one ham who got me interested in QRP through his CQ articles when I came back to ham radio as a reborn Novice after a 20 year hiatus.

Most of the contacts during the weekend were from this rig on 80, 40, or 20, but several were from the super 20 meter transceiver of Rich Littlefield, K1BQT. This is the latest of his QRP projects, basically the superhet receiver which appeared in 73 Magazine last winter and a 4 watt transmitter. This project is to appear in an upcoming Ham Radio and will be available from Radio Kit as a kit.

Other rigs were tried, but I'm not sure if contacts were made with them. (Hey folks, the log was reconstructed from beer-stained napkins, matchbooks, and the backs of parts flyers!) A number of projects, kits, completed rigs, and parts were strewn around the room. One of the most interesting rigs was a little one transistor TRANSCEIVER!

The operators who made the log were Ade W0RSP, Jim W1FMR, George W9ZSJ, Lou N8LA, Rich K1BQT, Jack NG1G, Ray AI2S, and Pat NW2I. I'm not sure, but I think that Ray and Pat were the only Extra Class, son-mother, QRP combination operating. The log shows 22 QSOs and included all 10 call areas as well as VE2, VE3, HG3, YU2, DL4, and UZ3. Reports received were pretty good ... usually 569 or so. Jim W1FMR also checked in to the NEN on Saturday morning on 40 meters and signed in all the hams he could see and identify in the room at the time. There were 17 check-ins that morning.

To commemorate any QSO made on this expedition, we have created a new certificate, the WADHQRPARCIHS Certificate. That stands for Worked All Dayton Hamfest QRP ARCI Hospitality Suites and the certificate is on quality paper, 8 1/2 X 11 inches, with a blue border. Anyone who contacted someone operating this station can claim their certificate by sending an appropriate SASE ... size determined by whether you care if it's folded or not, to me at the address listed. Likewise, any of the operators may claim a special version citing their activity there.

This may be a onetime offer. Then again, perhaps it is the start of a tradition. In any case, I'm looking forward to working you from Dayton on next year's QRP ARCI hospitality suite expedition.

Argosy Revisited...

SIMPLIFIED BFO ADJUSTMENTS FOR THE ARGOSY USING THE KVG XF-901 CRYSTAL:

Use a small, insulated screwdriver for the following. Note original article and Argosy owner's manual for additional instructions:

	MODE	ADJUST	FREQUENCY
1.	R	C2	9000.00 or 9001.50 kHz
2.	N	C3	8998.30 or 8998.50 kHz
3.	R	C2	9001.70 kHz
4.	N	C3	8998.30 kHz
5.	CW	CI	8998.05 kHz (+0.750)
6.	N	C3	8998.3 kHz
7.	Repeat steps 3 through 6 until no more error results.		

NOTE: If carrier adjustment was OK prior to modification, there is no need to repeat it as described in the Ten-Tec procedure.

ADDITIONAL NOTES AND COMMENTS:

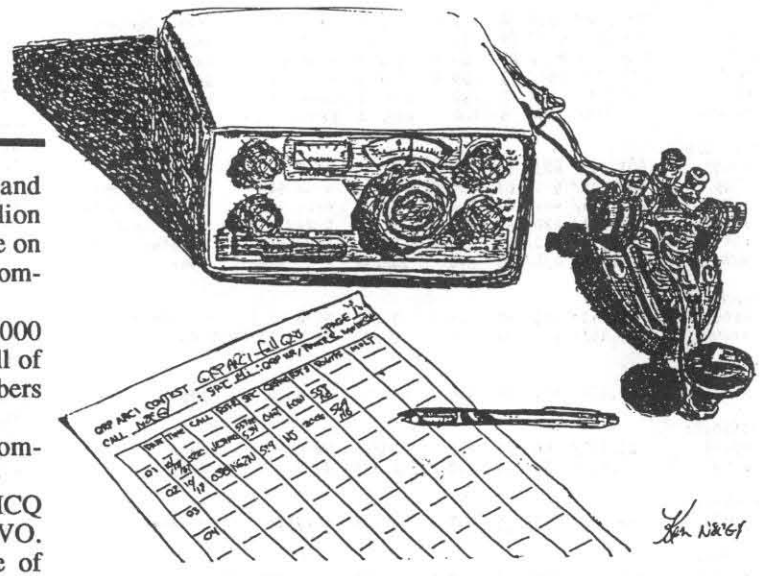
The Argosy II (digital) has a different front-end transistor (2N3866, usually used in low-power transmitter stages), a departure from the 2N5109 used in the analog version and which is intended to handle strong signals better. Ten-Tec also has eliminated the gain-compensating switching transistor for the second crystal filter, and gain is now fixed and hard-wired. Consequently, one has a more sensitive receiver with one filter than in the Argosy I version. However, adding a second filter produces apparent insertion loss which impacts S-meter readings. In the Argosy I, gain is boosted to compensate for the loss, and virtually no loss in gain is perceived.

In addition to the lab tests described here, the receiver of the modified Argosy has been tested successfully against several top-of-the-line rigs by a team of three operators. These rigs were the TS-430, TS-940, FT-980, IC-751 and Signal One. The ability of the modified Argosy to copy weak signals (S-3) only 500 to 700 Hz away from a powerful signal (S-9+30) exceeded that of all but one of the others — the Signal One.

If readers have any questions about these modifications and improvements or are interested in purchasing any of the modification components as listed in the original "ham radio" article, they may drop me a line at the above address. The Raytron filters are sold out. An s.a.s.e. is requested.

Contests

Red Reynolds, K5VOL
835 Surryse
Lake Zurich, Illinois 60047



The fall QSO Party found some great conditions and tremendous activity. Sixteen entries went over a million points! There were 24 single-band entries, with 16 of those on 20 meters. The only bad note was 27 fewer logs received compared to last year.

Note WL7BQM's score and rig. He picked up 20,000 bonus points for his two-fer transceiver on four bands! All of his QSO's were in the Novice bands; he wants more members to try these bands, only one QSO was with a member!

W1HUE said it best, "QRP is great—no TVI complaints!"

The entry of K3IVO merits special interest. WA8MCQ was out jogging when he stopped at the club station, K3IVO. Using the club's 6 element Yagi, he worked a couple of QRP'ers while he was running 20 milliwatts output!

No one objected to the new power scoring system, but a few more-than-one-watt entries said they would go back to one watt next time. The more-than-one-watt multiplier will remain at 7 for 1989 at least. So far it seems to even out the power levels.

A number of entries asked questions and information that required replies but did not include an SASE. Please fellas, when you expect an answer from any officer or board member, SEND AN SASE!

Fall CW QRP Contest

------TOP TEN ----------				-----SINGLE BAND ---------			
1	N4BP	3,587,220		10	M	WB2CZB	26,100
2	AA2U	3,560,400		15	M	KD9NT	48,840
3	W3TS	3,108,432		20	M	N4HIM	152,397
4	WD2H	2,570,400		40	M	W1KKF	94,082
5	WOKEA	1,723,313		80	M	WK8G	136,800
6	KH6CP/1	1,606,660					
7	W5TTE	1,606,320					
8	NFOZ	1,542,702					
9	NM7N	1,417,248					
10	W1XE	1,277,136					

CALL	SCORE/POINTS/SPC	POWER	BANDS /TIME	RIG	ANTENNA
ALABAMA					
KA4LKH	40,470/ 142/ 19	.90	20M/ 3	TS-440S	Loop/Gnd Pl.
W4DGH	26,030/ 118/ 21	2.5 B	2 / 5	Argosy 2	Yagi
KC0ET	10,500/ 75/ 14	.90	3 / 2	TS-130	Zepp
ALASKA					
WL7BQM	41,420/ 63/ 17	.90 S	4 /16	2-FER Xcvr	Quad/Vertical
ARIZONA					
W5VBO	225,383/ 405/ 53	2.0 B	3 / 8	IC-735	Vertical
CALIFORNIA					
N6GA	1,091,076/ 838/ 93	4.0 S	5 /17	HW-9	Yagi/Wire
KA6SOC	673,568/ 992/ 97	5.0	4 /23	FT-757GT	Quad/Gnd Pl.
W6YVK	149,604/ 274/ 39	2.5 S	5 / 6	Argo 509	Yagi/Dipole
WS6L	119,040/ 248/ 24	.60 S	2 /17	HW-9	Loop
K1EQA/6	72,828/ 204/ 34	2.0 B	3 / 8	Argo 509	G5RV
W6PRI	40,740/ 194/ 21	.90	4 / 4	---	---
WF6D	12,320/ 110/ 16	5.0	2 / 3	IC-735	Skel Cone/ZL
N6RNX	9,072/ 72/ 12	4.0 B	3 / 2	Argo 509	Vertical
W6SIY	5,280/ 14/ 2	.25	40M/ 2	Tuna Tin/HB Cvtr RX	Dipole
COLORADO					
WOKEA	1,723,313/1313/125	5.0 B	5 /21	Argo 509	Yagis/Slopers
NFOZ	1,542,702/1597/138	5.0	5 /17	TS-830S	Yagi/Zepp
W1XE	1,277,136/1448/126	4.0	5 /23	IC-740	Yagi/Vert/Dp
KROU	423,130/ 406/ 51	.90 S	3 /12	HW-9/m	Loop/Vertical
NOTU	148,870/ 263/ 35	2.0 S	4 / 6	HW-8/m	Inv Vee/Windom
K9AY	121,508/ 438/ 38	5.0	20M/11	HB Xcvr	Gnd PL
K1OG	68,068/ 187/ 26	5.0 S	2 / 4	HW-9	Yagi
WB0OKY	50,624/ 226/ 32	3.5	2 /11	Argo 509	Indoor Dipole
CONNECTICUT					
KH6CP/1	1,606,660/ 897/ 89	.85 S	6 /24	Argo/HB-40/ HB 160 Xverter	Dipole/Vert
W1HUE	688,212/ 761/ 83	4.0 B	5 /17	HW-9/m	Dipole/Inv L
KA1GPG	476,190/ 481/ 66	1.0 B	4 /11	Argo 515	Yagi/Inv Vee
NN1G	475,524/ 612/ 74	3.0 B	5 /15	HW-9	Windom
NT0Z	208,824/ 452/ 66	4.0	5 / 9	HW-9	Loop/Wire Yagi
W1KKF	94,082/ 303/ 21	2.4 S	40M/ 8	HB W7EL/m	G5RV
NT1E	22,484/ 146/ 22	5.0	3 / 3	TS-440S	G5RV
W1FD	20,340/ 113/ 15	3.0 S	20M/ 1	HW-9	Yagi
FLORIDA					
N4BP	3,587,220/1755/146	5.0 S	4 /21	TS-130	Yagi/Inv Vee
K4KJP	561,610/ 565/ 71	2.0 S	5 / 8	Argo 509	Yagi/Sloper
GEORGIA					
KB4GID	815,535/ 863/ 90	3.5 B	5 /23	Argo 509	Dipole/Vert
WD4DSS	189,336/ 483/ 56	4.0	4 /16	Omni	Dipole/Vert.
KA7LKV	69,412/ 268/ 37	4.0	4 / 4	---	---
WB4SYC	32,240/ 144/ 21	1.0	3 / 3	FT-101E/m	Vertical
WA4PFG	8,040/ 67/ 12	1.0	20M/ 4	Century 21	Dipole
WA4IML	7,462/ 82/ 13	2.0	4 / 7	Argonaut	Inv Vee
ILLINOIS					
WB9TBU	753,160/ 523/ 72	.90 S	5 /12	Argosy	Loop/Dipole
W9PNE	515,565/ 513/ 67	.90 B	5 /12	Argo 515	Loop/Sloper
NF9X	228,430/ 431/ 53	.90	5 /15	TS-130V	Vertical
KA9YMV	202,950/ 369/ 55	1.0	5 /14	FT-767	Vertical
WD9IWP	161,880/ 284/ 38	.95 B	3 / 8	IC-735	Inv Vee
K9PNG	145,964/ 401/ 52	4.5	4 / 6	Argo 515	Longwire
K5VOL	79,490/ 191/ 26	.98 B	20M/ 5	2-FER Xcvr	Longwire
KD9NT	48,840/ 222/ 22	.90	15M/ 8	Argosy 2	Vertical
ND9X	24,539/ 123/ 17	2.0 B	20M/ 2	HW-8	Vertical
INDIANA					
WA9S	361,900/ 460/ 51	1.0 B	2 /12	2-FER Xcvr	Dipole/Gnd Pl
KA9JKK	237,888/ 531/ 64	5.0	5 /22	Argosy 525	Loop/Mini Quad
LOUISIANA					
NO5W	156,450/ 447/ 50	5.0	4 / 6	TS-440S	Dipole
MARYLAND					
K3TKS	1,124,715/ 773/ 97	1.0 B	5 /21	Argo 509	Loops/Dipole
WA3EOP	146,916/ 477/ 44	4.0	4 /13	---	Dipole/Wire
W3HVN	70,735/ 235/ 43	5.0	5 / 8	Omni-D	Vertical
WA8MCQ	63,252/ 251/ 36	4.0	4 / 9	TS-430S	Dipole/Vert.
WA3GYW	22,890/ 109/ 20	2.0 B	4 / 2	HW-8	Dipoles
K3IVO	100/ 10/ 1	.02	10M/ 1	TS-440S	Yagi (6 El)
Op: WA8MCQ					

MASSACHUSETTS							
KZ1L	1,040,676/	953/104	4.7 B	5 /17	Ten Tec	G5RV "Turbo"
W1HH	997,245/	747/ 89	.90 B	5 /22	FT-301	Yagi/Loop/G5RV
N1FJ	988,200/	610/ 81	.90 S	5 /18	Argo 509	Yagi/Dipole/Ve
NO1R	232,845/	361/ 43	.90 B	5 /15	HW-9	Zepp
KB1RB	4,230/	47/ 9	.90	20M/ 2	Corsair 1	Inv Vee
KA1GDG	1,250/	25/ 5	1.0	40M/ 2	Century 22	G5RV
MICHIGAN						
N8CQA	891,315/	683/ 87	.90 B	5 /19	HW-9	Longwire
K8DD	805,185/	617/ 87	.90 B	5 / 9	Argo 509	Yagi/Lw/Zepp
K8CV	213,094/	491/ 62	5.0	5 / 7	Argo 515	Yagi/Dipole/Ve
KD8FR	149,940/	420/ 51	5.0	5 /10	C-22/Tempo-1	Horiz Loop
K8KIR	57,330/	210/ 26	5.0 B	4 / 4	Argosy-2	Dipole/Mini Bm
NW8G	46,956/	258/ 26	5.0	20M/16	Argo 515	G5RV
MINNESOTA						
WE0Q	142,443/	323/ 42	1.5 B	3 /10	HW-8	Vertical
KA0OMX	43,881/	193/ 31	1.3	2 /13	HB TX-15/HW-8	Yagi
MISSISSIPPI						
WB5KYK	99,225/	405/ 35	5.0	20M/15	TS-440S	Yagi
MISSOURI						
NOEIC	23,226/	158/ 21	4.0	20M/ 4	HW-9	Loop
KY0U	3,570/	51/ 10	2.0	2 / 1	HW-8	Zepp
MONTANA						
N7ICC	66,864/	199/ 32	4.8 B	4 /16	IC-751A	Dipoles
NEBRASKA						
NOBQW	171,570/	380/ 43	4.0 B	3 / 8	Argo 509	Loop
NEW HAMPSHIRE						
KN1H	1,237,910/	927/ 95	5.0 S	6 /20	Argosy/m	G5RV
W1FMR	141,512/	361/ 56	3.0	5 /10	Argo 509	Loop
N1CUU	41,580/	198/ 30	5.0	4 /12	HW-9	G5RV
NEW JERSEY						
AA2U	3,560,400/	1380/129	.90 S	6 /24	IC-730/FT-736	Yagi/Loop/Dp
KD2JC	477,360/	612/ 78	1.0	5 /16	HW-9	Yagi/Loop
WB2CZB	26,100/	145/ 18	1.0	10M/ 6	IC-575A	Yagi
W2JEK	4,270/	61/ 10	2.0	3 / 2	Argo 505	Dipole/Hertz
NEW MEXICO						
W5TTE	1,606,320/	828/ 97	.90 S	5 /21	Argo 505	Vert/Button Bm
NEW YORK						
WD2H	2,570,400/	1224/140	.90 B	6 /24	Corsair-2	Yagi/Quad
W2UYQ	493,240/	649/ 76	.75	5 /14	Argo 515	Yagi/Loop
W2PFS	369,360/	432/ 57	.90 B	6 / 7	TS-130V	Dipole
N2GU	128,800/	400/ 46	4.0	4 /18	HW-9	Vertical
NORTH CAROLINA						
WD4L00	124,616/	356/ 32	2.0 B	20M/11	2-FER Xcvr	Super Zepp
OHIO						
WK8G	136,800/	285/ 24	1.0 S	80M/ 7	IC-730	Zepp
OKLAHOMA						
WD5GLO	626,640/	746/ 80	2.0 B	4 /13	Argo 509	Yagi/Loop
PENNSYLVANIA						
W3TS	3,108,432/	1527/144	5.0 S	6 /21	HB Xcvr (S)	Yagi/Inv Vee
KW3F	261,422/	526/ 71	5.0	5 /10	IC-745	G5RV
SOUTH CAROLINA						
N4HIM	152,397/	531/ 41	5.0	20M/24	Argosy 2	Yagi
SOUTH DAKOTA						
WA0ZPT	1,240,312/	1125/105	4.0 B	5 /23	FT-7/IC-740	Loop/G5RV/Vert
WB0RXF	120,204/	318/ 36	3.5 B	3 /12	Argo 509	Yagi/G5RV
NR5A	12,901/	97/ 19	4.0	5 / 3	HW-9	G5RV
TENNESSEE						
NU4B	168,504/	408/ 59	4.0	5 /15	HW-9	Yagi/Vertical
WA4HXS	88,358/	255/ 33	2.5 B	2 / 5	Argo 509	Vertical
WO5K	59,100/	197/ 30	1.0	3 / 6	Century 21	Vertical
TEXAS						
WG5G	179,536/	458/ 56	5.0	3 / 7	TS-130V	Yagi
W5TB	112,455/	315/ 51	5.0	4 /12	Century 21	Random Wire
UTAH						
WJ7H	26,320/	170/ 28	5.0	3 / 4	KWD 440	Yagi
VERMONT						
NG1G	1,185,240/	714/ 83	1.0 S	5 /11	HW-9	Loop
VIRGINIA						
N4QYK	387,536/	506/ 72	3.0 B	5 /20	HW-8,CB/m	Yagi/Dipole
KC4ZA	89,936/	292/ 44	1.7	4 /12	HW-8	Vertical/Wire
WASHINGTON						
NM7N	1,417,248/	1216/111	5.0 B	5 /20	Argosy-2	Yagi/Dipole
NOAX	469,938/	625/ 71	5.0 B	4 /19	Argosy 525	Loop
NM7M	39,788/	203/ 28	5.0	2 / 2	Corsair	Yagi/Inv Vee
WISCONSIN						
N9AW	782,460/	972/115	4.0	5 /23	Argo 505	Yagi/Vert.
NA9M	619,801/	973/ 91	3.0	5 /17	TR-7	Yagi/G5RV
N9FVN	280,364/	527/ 76	5.0	5 /10	Argosy-2	Yagi/Loop/Vee
KA9VAX	169,600/	265/ 32	.90 S	2 / 7	HW-8	Random Wire
K9GDF	2,128/	38/ 8	5.0	20M/ 1	---	---
ALBERTA						
VE6BLY	26,488/	172/ 22	5.0	20M/ 4	IC-761	G5RV
VE6BMX	14,400/	90/ 16	1.0	20M/ 2	FT-102	Yagi
BRITISH COLUMBIA						
VE7EKS	20,748/	156/ 19	2.0	3 /10	HW-8	Dipole
ONTARIO						
VE3OOL	235,438/	502/ 67	3.0	5 /13	Argo 509	Yagi/Dipole
QUEBEC						
VE2ABO	69,692/	262/ 38	3.0	5 /13	HW-9	Loop/Inv Vee
VE2AUG	9,555/	65/ 14	1.5 B	3 / 6	HW-8	Dipole
SASKATCHEWAN						
VE5VA	158,860/	338/ 47	.90	3 / 8	IC-735	Yagi
CZECHOSLOVAKIA						
OK2BMA	5,805/	23/ 5	3.0	20M/ 1	HB HW-8(HMW-8)	Sloping Wire
ENGLAND						
G3XJS	72,456/	228/ 36	3.0	3 / 5	HB Xcvr	Yagi
HOLLAND						
PA3ELD	19,152/	144/ 19	3.0	3 /14	TS-430S	Dipole
JAPAN						
JH5NTL	392/	14/ 4	2.0	10M/13	MX-28S	Yagi

CHECK LOGS: N9GPF/8, AE7K

****

TEAM COMPETITION

Colorado QRP Team	(KROU, K9AY, WOKEA, W1XE)	3,545,087
Athens QRP Club	(KB4GID, WA4IML)	822,997
Harper Air Hawks	(K5VOL, K9PNG, WD9IWP, KA9YMV)	590,284
N6RNX Team	(N6RNX, KB6STF, KB6ZBI)	9,072

****

Time of operation rounded to nearest hour
B = Battery power
S = Solar / natural
/m = Modified
HB = Homebrew

****

1989 QRP ARCI Contest Dates

Winter Fireside Sprint
Jan. 15 (2000-2400Z)
Classic Sprint
Mar. 12 (2000-2400Z)
Spring QSO Party
Apr. 8 (1200Z) to 9 (2400Z)
Hootowl Sprint
May 28 (2000-2400Z local time)
Field Day
June 24-25
Summer Homebrew Sprint
July 9 (2000-2400Z)
Summer Daze Sprint
Aug. 13 (2000-2400Z)
Fall QSO Party
Oct. 21 (1200Z) to 22 (2400Z)
Holiday Spirits Homebrew Sprint
Dec. 10 (2000-2400Z)
Every Sunday: QRP ARCI QSO Party

Summer Daze Contest

------TOP THREE --------			-----SINGLE BAND ---------		
1	W8WVR	179,580	10 M	N4QYK	35,910
2	W3TS	64,800	20 M	WB7SNH	14,580
3	WD8JCR	36,340			

CALL	SCORE/POINTS/SPC	PEP POWER	BANDS /TIME	RIG	ANTENNA
ALABAMA					
*W4DGH	10,500/ 125/ 14	6.0 B	3 / 2	Argosy 2	Dipole/Yagi
KA4LKH	10,440/ 116/ 16	8.0 B	3 / 2	TS-440S	Vertical/GP
FLORIDA					
KA4TMJ	756/ 21/ 6	7.0 B	10M/ 4	TS-670	Yagi
GEORGIA					
AB4GK	3,816/ 53/ 12	5.0	3 / 4	TS-440	Vertical
ILLINOIS					
*W9ZSJ	5,832/ 54/ 9	5.0 S	3 / 2	Argo 509	Random Wire
KA9YMV	4,950/ 75/ 11	5.0	2 / 2	FT-767-GX	Vertical
#K5VOL	7,800/ 65/ 12	2.0	4 / 3	Argo 509	Long Wire/Vert
INDIANA					
KA9JKK	4,224/ 64/ 11	5.0	4 / 4	Argosy 525	Loop/Mini Quad
MARYLAND					
*WD8OYG	20,700/ 138/ 25	5.0	4 / 4	HW-101/Silt.	Dipole/Vert
K3TKS	2,380/ 34/ 7	2.0	3 / 2	Argo 509	Loop
MICHIGAN					
*KE8QD	16,920/ 141/ 30	10.0 S	3 / 4	SB-102	Inv Vee/Yagi
N8LA	4,884/ 74/ 11	5.0	4 / 4	Argo 515	Inv Vee
KD8FR	2,262/ 87/ 13	10.0	3 / 2	Tempo-1	Doublet/Vert
NW8G	1,452/ 66/ 11	10.0	3 / 2	Argo 515	G5RV
MISSISSIPPI					
*WB5KYK	12,960/ 120/ 18	5.0	20M/ 3	TS-440S	Yagi/Vertical
NEW HAMPSHIRE					
W1FMR	2,142/ 51/ 7	6.0	2 / 3	Argo 509	Loop
NEW JERSEY					
KD2JC	5,508/ 81/ 17	7.0	4 / 3	FT-102	Dipole/Yagi
NEW MEXICO					
*KF5OW	32,700/ 109/ 15	2.0 S	3 / 4	FT-7	Vertical
W5TTE	7,776/ 54/ 9	3.5 S	3 / 2	Argo 505	Gnd Plane
NEW YORK					
*W2VD	33,108/ 178/ 31	5.0	3 / 4	IC-735	Inv Vee/Yagi
OHIO					
*W8WVR	179,580/ 219/ 41	1.8 S	5 / 4	Argo 509	Dipole/Yagi
*WD8JCR	36,340/ 158/ 23	.95	4 / 4	Argonaut	Dipole/Vert
KA8NRC	1,020/ 17/ 4	1.0 B	10M/ 3	Argo 515	Yagi
OKLAHOMA					
*WD5GLO	8,460/ 94/ 15	5.0	3 / 3	Argo 509	Yagi/Inv Vee
PENNSYLVANIA					
*W3TS	64,800/ 162/ 20	1.0 S	4 / 4	HB TCVR(SUP)	Inv Vee/Zepp
KW3F	6,556/ 149/ 22	10.0	4 / 2	IC-745	G5RV
TEXAS					
KA5PVB	4,752/ 72/ 11	5.0	2 / 4	TS-520	Vertical
VIRGINIA					
*N4QYK	35,910/ 190/ 21	5.0 B	10M/ 4	CB Modified	Delta Loop Bm
K4AHK	18,696/ 123/ 18	3.8	3 / 3	Argo 509	Attic Dipoles
WASHINGTON					
*WB7SNH	14,580/ 108/ 15	6.0 B	20M/ 4	Argo 509	Yagi

CHECK LOG: K6MDJ

Time of operation rounded to nearest hour
* = Certificate winner
# = Contest Manager - not eligible
B = Battery power
S = Solar / natural
/m = Modified
HB = Homebrew

1989 Michigan QRP Club 9th Annual CW Contest

DATE:

1200Z Jan. 21 to 2400Z Jan. 22 (36 hours). CW only, 160 through 10 meters (WARC bands excluded.) Contest is open to all amateurs and all are eligible for awards.

CLASSES:

A=250 milliwatts or less output
B=250 milliwatts to one watt
C=1-5 watts output
D= more than 5 watts ouput

EXCHANGE:

RST, QTH (S-P-C) and M-QRP membership number (non-members send power output.)

FREQUENCIES:

1810, 3560, 7040, 14060, 21060 and 28060 kHz.
Novice: 3710, 7110, 21110 and 28110 kHz.

SCORING:

Stations may be worked once per band for QSO points. Member contacts are 5 QSO points each. Non-member contacts are one QSO point each. Multiply total QSO points (all bands) by the number of states-provinces-countries worked per band, for total points.

Bonus Points: Total points x 1.25 for 100% battery or x 1.5 for 100% natural power.

AWARD CERTIFICATES:

Certificates will be issued for the highest score in each state, province and country. A complete log is required for each band, as well as your name, call, address, equipment description and power output.

Logs must be received by Feb. 17, 1989. Please include and SASE for a copy of the results.

All logs go to L.T. Switzer N8CQA, 654 Georgia, Marysville, Michigan 48040

A set of one log sheet and one entry form is available for an SASE to the above address.

Announcing the Classic Sprint

Co-sponsored by QRP ARCI and M-QRP Club

DATE/TIME: March 12, 2000-2400Z

EXCHANGE: RST, S-P-C, power output

POINTS: 5 points per completed exchange

MULTIPLIERS: S-P-C total all bands (the same station may be worked on more than one band for points and multiplier.)

ENTRY CLASSES:

A=less than one watt output CW
(less than 2 watts PEP SSB)
B=1-5 watts output CW (2-10 watts PEP SSB)
C=more than 5 watts (10 watts PEP SSB)
Multi-band and single-band categories

BONUS POINTS (Classic Equipment Used)

+200 for transmitter
+300 for receiver
+500 for transceiver

SUGGESTED FREQUENCIES:

CW	Phone
1810	
3560, 3710	3985
7040, 7110	7285
14060	14285
21060, 21110	21385
28060, 28110	28385, 28885
50060	50885

Entries should include a copy of the logs and a separate summary sheet. Include duplicate checksheets with entries of 100 QSOs or more. All entries must include a complete name, call, and address and must be postmarked within 30 days following the contest. Include an SASE for results. Late entries will be counted as checklogs.

Include a description of homebrew equipment, commercial equipment and antennas with each entry. Classic equipment is defined as any equipment whose original design is at least 15 years old and no longer in production. FOr homebrew equipment, the original circuit must be at least 15 years old and comparable components in production 15 years or more as much as possible.

Mail entries to Buck Switzer N8CQA, 654 Georgia, Marysville, Michigan 48040.

Special Notice for QRP-ARCI Contests:

A few changes have been made to the contest rules again. One is that SINGLE-BAND entries are now allowed in ALL sprints.

The other major change is that the Fall QSO Party will be the third full weekend in October to end the conflict with the Pennsylvania QSO Party.

Remember that homebrew gear earns bonus points in all contests.

Some questions have been raised as to what is "S-P-C." This stands for "States", "Provinces" and "Countries," used for a scoring multiplier. Naturally, the United States and Canada do NOT count as countries.

Classified Ads

Wanted: Ten Tec model 243 remote VFO, matches Omni series. Also, any QRP Quraterly publications prior to 1983, photocopies OK. Paul Schaffenberger 7J6CAM, PSC #1, Box 20272, APO San Francisco, California 96230.

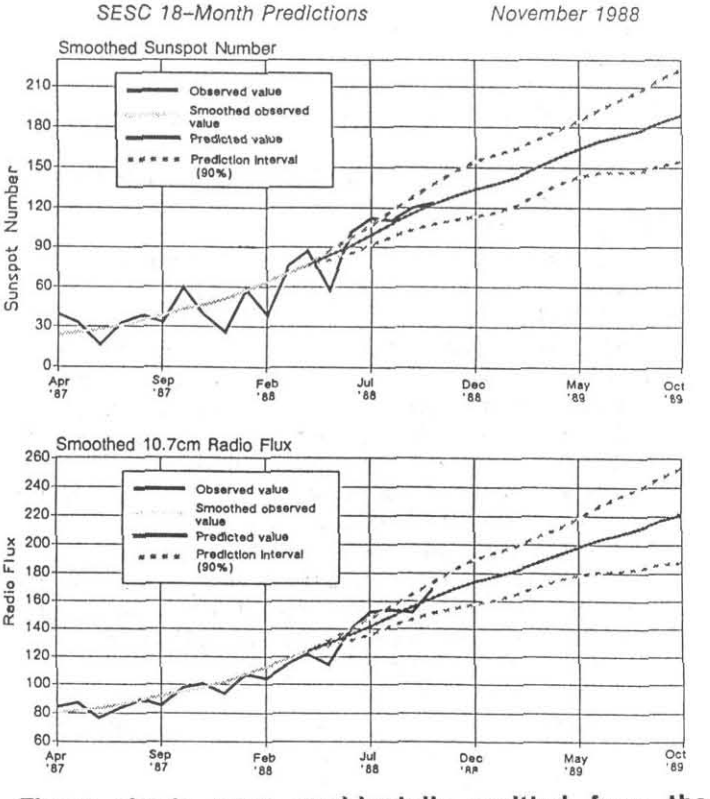
Wanted dead or alive: HW-9 in any shape of repair or completion. Cam Hartford N6GA, 1959 Bridgeport Ave., Claremont, California 91711. 714-621-3516.

Wanted: Ten Tec PM-2 or PM-3 series transceiver. Ron Mayer W8KYD, 5410 Alber, Parma, Ohio 44129

For Sale: Windcharger 122, 12 volt/200 watt wind generator with 10' Rohn 25G tower stub, turntable. Needs new prop. Stored indoors past 5 years. David E. Evans K5SOR, Box 605, Salado, Texas 76571. 817-947-5493 evenings/weekends.

Six Month Solar Activity Outlook
November 1988 - April 1989

The rate of rise of cycle 22 appears to be falling behind that of cycle 19, although it remains one of the strongest on record (see page 17). By the end of the outlook period the smoothed sunspot number is projected to be 157 (plus or minus 22) and the 10.7 cm flux 192 (plus or minus 22). The number of energetic events could double (see page 18).



These charts were accidentally omitted from the Propagation & DX column in the October 1988 issue of The Quarterly. More charts are on page 20.

Members' News

Fred Bonavita W5QJM
P.O. Box 420321
Houston, Texas 77242-0321

QUICK! UP IN THE SKY!
IT'S A QRP STATION
IN A HOT-AIR BALLOON!

Look closely at the accompanying photo—and you can see **Lou Berry, KF50W,** operating QRP ssb from the gondola of a balloon during last fall's annual festival at Albuquerque, N.M..

Using an FT-7 and a hand-held 10-meter transceiver, Lou logged 125 stations, including five QRP ARCI members, while gently drifting around the New Mexico countryside with hundreds of other balloonists. His antenna was a B&W AP-10 telescoping unit clamped to the side of the basket and fed via a tuner with a counterpoise tossed over the side to aid loading.

Lou's contacts included 14 countries and 48 states (Alaska and Hawaii among them) with about 4 watts' output.

He made the ascent after a family trio to California where he visited **Fred Turpin, K6MDJ,** the club's awards chair, and worked QRP from the Queen Mary at Long Beach. Conditions were poor, however, and Lou reports doing better from his mobile set up in the family van.

FIRE UP THOSE SOLDERING IRONS!

Among the features at the QRP section of the 75th Anniversary Convention of the ARRL will be a homebrew-gear contest, the first prize for which is a $50 gift certificate from one of the major mailer parts houses.

Thanks to the generosity of one of the club's members. this certificate will be awarded among other prizes for the too designed and/or constructed piece of homebrew equipment. Gear built from commercially available kits is ineligible for this event.

Rules for this contest and other features of what is shaping up to be an outstanding QRP section of the convention weekend will be published in the April issue of The QRP Quarterly together with registration blanks and other information. Set June 2-3-4, 1989 aside now and make your plans to be in the Dallas-Fort Worth suburb of Arlington, Texas, for a full weekend of QRP activities.

A few time slots remain open for those who would like to present papers during the technical forum on that Saturday. Those interested should get in touch with your column editor promptly.

C.F. Rocky, W9SCH, of Albany, Wis., urges QRPers who find themselves confined by narrow city lots and unable to erect "death ray" antenna systems not to lose hope. "Rock" uses an 80-meter, center-fed Zepp antenna at 25 feet and has logged 51 countries on 10, 15 and 20 meters with five watts' output or less.

"This is hardly noteworthy in comparison to what the real 'bird dogs' do, of course, but perhaps it might encourage others who operate from a typical town location and who do not have a high gain' antenna." he says. "It's not
true that a beam is necessary to make DX contacts. Put up that wire as high as you can. Tune it carefully and go after DX. If you are tenacious, make good use of conditions and have reasonable expectations, you too can work your share."

There was a healthy turnout among QRPers at the Gaithersburg, Md. hamfest early last fall. **Mike Czuhajewski, WA8MCQ,** of Jessup, Md., reports **K3TKS, N4SKS, K4AHK, W3TS, WA3MEJ,** and **W3CQE** were in the crowd. With a showing like that, Mike says QRPers ought to have an information booth at the next hamfest.

FOOD FOR THOUGHT
FROM ACROSS THE ATLANTIC:

QRPer **Terry, G0CFN,** says he's found too many CW operators tend to run their characters into a single, long transmission that's virtually impossible to read or send so fast some of their dots and dashes are lost. He thought his CW was reasonable until he recorded it and played it back.

"Rubbish!" was the eye-opening result. It bore no resemblance to what he thought he was sending. Terry says in a recent issue of "Sprat," the quarterly newsletter of G-QRP Club. He suggests members record their QSOs, wait a few days and then play it back. There might be some surprises in store.

Dave Heintzleman, N0BQW, operates QRP mobile around his hometown of Grant, Neb. with good results, and he has some suggestions for others interested in giving it a shot:

"I run my Ten-Tec Argosy at 10 watts' input, and the antenna is a Hustler whip with a three-band adapter with coils for 20, 15 and 10 meters so I can change bands at the flip of the switch on the Argosy," he advises.

Dave feeds power to the rig from his car battery with heavy-duty coaxial cable through a 9-amp noise filter from Radio Shack, bypassing the car's electrical system. The rig must be well grounded, preferably to the firewall, he says, and the exhaust system should be grounded to the frame at the rear of the car.

Even with that arrangement, Dave continues, "Engine noise is a pain on 20 meters, although it's not so bad on the other bands."

Dave's mobile operation varies between a 1978 Buick and a 1985 Pontiac, and he observes: "GM's noise filtering in the '85 is horrible. It is my understanding that in recent years, all GM's filtering is built into the car radio, and nothing has been done about the car's electrical system."

His antenna on the Pontiac mounts on a trailer hitch welded to the frame, and its efficiency is superb, he says. But on the Buick, the whip mounts onto the rear quarterpanel near the trunk lid.

"I discovered I need a spring between the mount and the whip, or I strip threads or wear a bigger hole in the mount so the mast comes loose," he warns. "On both cars, when I'm using the multi-coil adapter, a light guy rope is essential."

As for other hints, Dave says: Avoid Kilowatt Alley on 20 meters, since it is a rough place for a mobile, even if you are running 100 watts, let alone QRP: if you operate 20, use the nets (he's worked Austria, Sweden and Australia on ssb after checking into the County Hunters Net); pick a strong signal calling CQ to answer: and use of a single headphone from a broken personal cassette player helps keep peace in the family.

"I haven't been brave enough to try CW mobile in motion." Dave says. "But mobile operation sure helps out in the wide-open spaces of Nebraska. If I'm in an empty county (devoid of hams), I even get to be DX. What an ego-builder!"

Responding to our inquiry in the October issue of The Quarterly about fastest times for completing WAC/QRP. **Dan Walker, WG5G**, of San Antonio, Texas, reports doing it in about an hour and 24 minutes!

It started when he landed 7X4AN/QRP in Algeria for country No. 207 QRP (with 188 confirmed) and began looking around the bands so see who else was lurking out there.

By the time the dust settled, Dan says he'd worked EA8BNM/EA6 and PY2FR on 15 meters CW with five watts output. He moved to 10 meters (still with five watts out) and landed AL7HC, JA3DAF and ZL1OI, although finding the ZL1 took almost 30 minutes of hunting.

"I know I can beat that time," Dan says, "but let's see the responses to the challenge first." OK. gang, you've got it.

Meanwhile, **Peter Elmendorf, WE2P**, of Kingston, N.Y., offers a slightly different view of a fast-track WAC award, and he has some interesting and perhaps sobering thoughts.

Without knocking the idea of landing WAC or even DXCC, Peter suggests an even more ambitious goal might be for the club to start its own Worked All Zones (WAZ) award. The fact that QRPers can qualify for WAC in an afternoon signifies low-power operating has "come of age" and that we ought to set our sights a little higher, he argues.

"WAZ is the ultimate DX award, since one's station must reach into all the different zones," he says. "One can get DXCC with weak spots in station coverage, but WAZ requires a station of great reach.

"QRP/WAZ. as a formal program, is a very strong statement of how serious QRPers really are," Peter says.

He proposes a "graduated" WAZ program so the maximum number of stations can participate. The basic award could be for 20 zones with endorsements in increments of five until all 40 zones are worked, he says. Rules would be the same as CQ magazine has for the original WAZ certificate, except power could not exceed 5 watts output on CW or 10 watts p.e.p. on ssb, he suggests.

Rather than confuse things by starting from scratch on, say, Jan. 1, 1989, QRPers should be allowed to dig through their QSLs to see how many zones have been worked over the years and use them to help qualify for the certificate, Peter recommends.

As I said, that's an interesting suggestion, and we would like to hear more about it. Peter's letter has been sent to **Fred Turpin, K6MJD**, the club's awards chairman, and to **Jim Fitton, W1FMR**, the president. If there is sufficient member support for the idea - and you are urged to let Fred, Jim and me know your thoughts, perhaps the club's board of directors can authorize the start of the program when it meets June 2-4, 1989, at the ARRL National Convention in Texas.

That's it for this quarter, gang. My thanks to all of you who contributed to this issue's column, and I urge others to send along material, too. We always can use some good, glossy, black-and-white photos of members' activities. Remember: even if you don't think what you are doing is worthwhile reading, tell us about it anyway.

The QRP Candy Store is a clearing house for all member and ARCI sponsored products such as T-shirts, ball caps, hat pins, stickers, stationery and more. Promote QRP in your area! Send your ideas, suggestions and an SASE to Bob Spidell W6SKQ, 45020 N. Camolin Ave., Lancaster, California 93534, for store flyer.

Idea Exchange

by Mike Michael, W3TS
P.O. Box 593 Church Lane
Halifax, Pennsylvania 17032-0593

"IL BOMBINO GRANDE"

Rock W9SCH writes with some improvements for his little rig. (It seems a homebrew rig is never finished!)

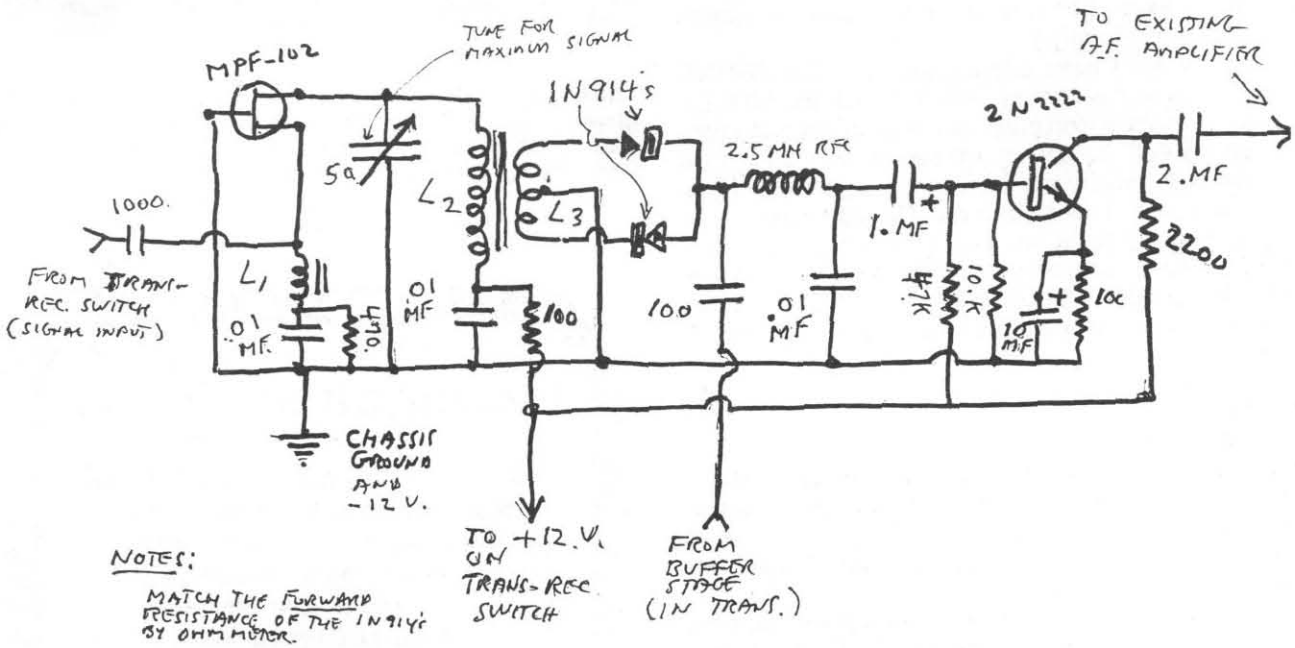
"The receiver function of this little 15-meter transceiver (The Quarterly, April 1987, page 7) was quite effective until recently when powerful adjacent-band S.W. broadcast stations began to pour thousands of microvolts into the poor thing. Extra tuned-circuits in the input helped, but did not ewliminate these irritating intruders. So major surgery seemed to be indicated.

"Upon Wes Hayward's helpful advice, the double-gate MOSFET mixer was removed and a "half-diode-ring" product-detector substituted, which effectively expunged the "music." But such a circuit exhibits a sizeable loss instead of the MOSFET's former gain. So a grounded-gate JFET rf amplifier was added ahead of the new product-detector and an additional transistor audio amplifier following it. This restored a reasonable overall gain-level.

"Having no properly calibrated signal generator, we publish no qualitative claims. However, we will say that if we could work one-quarter of the 15 meter DX we clearly hear on this revamped receiver, we would be happy indeed.

FREQUENCY COUNTER AS A CHEAP "SPECTRUM ANALYZER"

A few weeks ago, I received a call from **Doug NRIA.** He was trying to get some bugs out of his latest project which was "SLIPPERS FOR THE HW-7" from the hand book. He was building it for a small 30 M xcvr that was to be his travel rig. The trouble he was having was that it seemed to be tuning up well into a dummy load with the proper amount of output, but when he hooked it into his antenna the swr went over 12:1. This has happened to me some times and what was actually happening was that the amp was tuned up to a harmonic or sub-harmonic. Into the dummy load all looked well, because the load is not frequency selective. But when you hook an antenna on to the amp that is cut for a frequency other than the amp is tuned to, you see a high swr. This was puzzling to me the first time I had it happen. What I do now when I tune up an amp is to lightly couple my frequency counter to the dummy load as a sort of "poor mans spectrum analyzer" to see at what frequency the bulk of the rf is. Then as I tune I can see if I am peaking the amp's out put on a harmonic or the proper frequency.



NOTES:

MATCH THE FORWARD RESISTANCE OF THE IN914's BY OHM METER.

L1: T-30-2 FORM WOUND FULL OF NO. 26. WIRE.

L2: T-50-2 FORM 16. TURNS, NO. 24.

L3: SIX TURNS NO. 24. ON TOP OF L2. CENTER TAPPED.

MODIFIED CIRCUITRY IN "IL BOMBINO GRANDE" RECEIVER SECTION.

CUTTING NOISE IN AUDIO FILTERS

Luke W5HKA dropped me a note on what he finds as the best op amp for audio filters. He says to replace an LM 324 with a TL 084 but for the lowest noise an NE 5514 is even better. He gets his NE 5514's from DIGIKEY.

TOROID WINDING CHART

Mike WA8MCQ dropped me a note to say that in the July 1988 Quarterly, his chart for computing the length of wire needed to wind toroids is only for single layer coils. It does not apply to bi/tri/quadrifilar coils, nor does it apply to multi-layer coils. If anyone tries to wind these, they should not compute the length from the chart or add some additional wire so they will have enough.

HW-7/8/9 POWER CONNECTOR

Mike WA8MCQ says:

"What do you do if you want to operate your HW-7/8/9 portable or mobile, away from its matching power supply and plug? You could scrounge up another plug to match the power socket on the QRP rig, or cut the wires off the power supply cable and take the plug along with the rig. Dick Boykin, N3GGP, has a better idea. He mounted a pair of binding posts on the rear panel of his HW-8, wired in parallel with the existing power connector. This allows connection of any 12 volt source without requiring a matching plug for the HW-whatever. It also has the added advantage of making a convenient connection to the 12 volt source when the matching supply is used. It could be used to power an externally mounted accessory such as a keyer or crystal calibrator. (You would of course have to be careful not to exceed the current capacity of the power supply.)"

On my HW-8/9 I have added good old RCA PHONO JACKS for the power connector, wired in with the MOLEX power socket. I prefer phono plugs and jacks to any other connector on all my QRP rigs. They are easy to use , do the job well, are low cost, readily available, and the pull out if you have a wire snag when moving gear etc. The only draw back is you can plug power into the ant, key, etc if you are not careful. When I use them on Battery Packs I make sure the PACK has a FUSE because if the tip and ring get shorted(which can happen very easily) you blow the fuse instead of having a wiring fire.

HW-9 DRIFT

Dick K4BNI writes:

"Diode junction capacitance varies with ambient temperature levels and I wondered if this characteristic could be used to compensate for HW-9 VFO drift. Mine has a positive drift of about 3kHz over an eight hour period. Not critical, but bothersome.

"To experiment, I connected two 1N914s back to back and soldered them across variable capacitor C1 (points E and GND.) I then zero beat the receiver on WWV, 10 MHz. After eight hours, the drift was barely discernable and occurred mainly in the half hour warm-up period.

"This procedure will shift dial calibration which can be reset by adjusting VFO coil, L118. I did not check other diodes and different pairs may have to be tried to match my results."

Any one out there have a WELZ RP-120 QRP Power Meter that they are not using and would like to sell? I was to slow when **Fred W5QJM** had them for sale and did not get one. So if some one has a spare and would like to sell it please drop me a note with the price. Or maybe some one could just send along the schematic so I could build my own copy of it. THANKS!

Being interested in QRP and portable operation, I am also interested in any suitcase or spy-type radios. I am also interested in military HF manpack sets too.I have a small collection of units and I am always on the look out for additions to my collection. So, if any of the readers have info, schematics, manuals, sets for sale or loan, I would like to hear from them.

73, Mike W3TS

Looks like the perfect company for our little group, right? Mike W3TS sent this photo along. The QRP actually stands for "Quality Rehabilitation Performance."

PROPAGATION AND DX

Bob Brown, NM7M
504 Channel View Dr.
Anacortes, WA 98221

It's not surprising that living lives which are "landlocked" and surrounded by oceans, we have have romantic ideas about going to sea and living on islands. I must confess that I suffer from those inclinations and it shows up in how I work on the bands. Thus, everything comes to a halt if I hear a ship at sea or signals from an island. But of those two parts of my DXing, only one is organized; I'm talking about "island chasing" where a whole set of awards have been established. However, I have said, from time to time, that I had a "Marine Mobile Hall of Fame" when in a MM-QSO. But I must confess that was just a way of applying a bit of gentle pressure so I could add another QSL to my pile of MM's.

In the absence of any organized approach to dealing with MM QSO's, let's go with the island game and see what there is to offer for the QRP DXer, starting with the DXCC country list. There, it is surprising to see how generous the award system can be on some occasions and how stingy on others. I hate to say it but it all seems to hinge on politics. For example, Desecheo Island (KP4) is only a few miles off the coast of Puerto Rico and counts as a separate DXCC country while the Pribilof Islands are several hundred miles off the coast of Alaska yet only come under the KL7 rubric. The ultimate in generosity can be found in the Caribbean region where separate DXCC countries abound and offer happy opportunities to DXpeditioneers, year in and out. Of course, QRP DXers benefit from this too, increasing their DXCC count without having to wait for unusually good propagation conditions.

While one can get some satisfaction from chasing islands in a personal, disorganized way, more substantial benefits come from working for an award to add to the "wall paper" in your shack. But there are awards and then there are AWARDS. That's just one way of saying that one award may be more demanding than another. But you have to start somewhere so let's go for one that is reasonable, say the IDX Award offered by the Whidbey Island DX Club up here in Washington. For their award, one has to work a minimum of 50 islands or groups that are on their list. Generally speaking, their system is similar to that of the DXCC award but they do tend to take islands in groups, like the British Isles. The best way to see what is needed is send for a copy of their rules by writing to Bill Gosney, KE7C, at 2665 N. Busby Road, Oak Harbor, WA 98277. When you've worked 50 islands on their list, a few bucks will get you their IDX (Island DX Award).

Now I mentioned that there were awards and AWARDS; the BIG ones are offered by the IOTA (Islands on the Air) group in England. Their system of recognizing islands for awards is much more severe than the DXCC rules, lumping together calls like G, GD, BI, GJ, GM, GU and GW as well as EI into one island group. With that, I think you can see what I mean. On the other hand, they give separate island credit for some exotic islands in that same area, say Aran Is., Farne Is., and the Inner Hebrides, to name a few. To really see what is involved, you need the IOTA Directory of Islands. Here in the USA, you can get a copy by sending $3.00 to the DX Bulletin, 816 - 4th Street, Suite 1001, Santa Rosa, CA 95404. When you look through the Directory, your heart may sink as the size of your islands list is bound to shrink; on the other hand, your interest will certainly be heightened!

For one thing, IOTA offers a multiplicity of awards, some 15 in number, for working islands associated with the various continents as well as special groups like the British Isles, West Indies, Arctic and Antarctic Islands; also, they have a Century Club Award for working 100 islands in their Directory, including one from each continent. For the special awards associated with continents, the requirement is that you work 75% of the activated islands/groups in the continent or 75 islands, whichever is less.

Okay, that gives you a rough idea of what is involved with the IDX and IOTA awards. As for the administrative part, IDX has simple rules; either send in your QSL's or have them reviewed and verified by two other hams. For me, the latter was the simplest, involving meeting with friends over a cup of coffee and spending an hour or so swapping lies about DXing. The IOTA rules are a bit stiffer; either send in those precious QSL's or make Xerox copies of both sides of the ones you do not want to part with. Myself, I am pretty close to the IOTA Century Award but I'll be damned if I'll send in some of my precious QSL's. So where I have duplicates, I'll send them in when the time comes but after that, I am afraid I'll be running up a good sized bill for Xeroxing as there's no way I'd trust some of my rare ones, say FT5ZB on Amsterdam Island, to anybody's postal service, British or American; NO WAY!

For my part, I've always been interested in islands and marine mobile stations, as I said earlier, but my interest in awards has varied. Thus, I was delighted to discover one day that I had all I needed for the IDX Award. After that, I raised my sights to the IOTA Awards only to have my hopes dashed when I saw how demanding they were. But now my interest is

This was the total QRP ARCI attendence at the 1981 Dayton Hamvention. Hard to believe that 1988's attentendence was well over 100!

up again, not just the result of my own DXing (which was at a low ebb in '87) but heightened by the accomplishments of other QRP DXers in that year. In case you missed it, 1987 was the 50th anniversary year of the DXCC Award and the ARRL offered the Golden Jubilee of DXCC Award to those who could work DXCC in the calendar year of '87. Now one of the California Kilowatts accomplished that on SSB in about a day but others, including a number of QRPers, made it during the year, in spite of the fact that we were barely coming out of the depths of solar minimum of Cycle 21. I think you'll agree, that takes a lot of work and skill, especially working at the QRP power level.

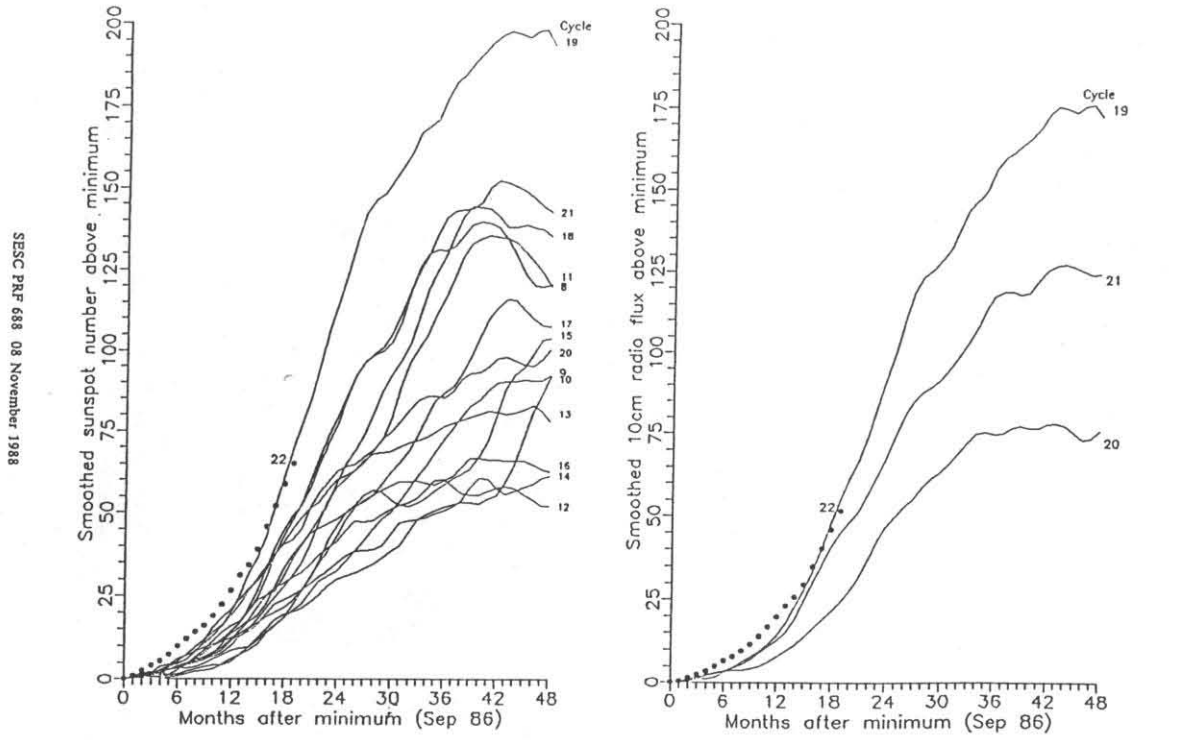
To see what I mean, look at the article by Jay, KV7X, in the July '88 Quarterly on "DXing with Loop Antennas". Jay worked 104 countries in '87, getting the last one on Dec. 17. Another one who received the Golden Jubilee of DXCC Award was Dan, WG5G, mentioned in Member's News in the same issue. If you look up that, you'll see that Dan had 163 worked/151 confirmed for his DXCC/QRP when that was written. In a recent note, I learned that he's up to 187/173 now and worked 141 countries in '87.

I don't know what their IOTA counts are up to at this point but they're working some good ones and probably catching the fever. For example, Jay has busted through pile-ups to work calls like VP8 and 4K1 down in Antarctica as well as EA6 and EA9 over in Europe. Dan has his share of success too, breaking through to VK9YT on the Cocos Islands and ZD8HR on Ascension Island. Everything considered, you can see that QRP DXing is alive and well, pushed on by the simple reason that "it's there". But if that's not enough, the challenge of island collecting is there to spur DXers on too. And there's the other side of it as well, instead of just chasing islands, on can be a DX- or Island-object too, something like I mentioned in connection with going to MT or WY and calling "CQ UA". Thus, just sitting here at my QTH on Guemes Island, I am located in the San Juan Archipelago (IOTA NA-65). And if you happen to be a W1, there are possibilities there too, places like Martha's Vineyard (IOTA NA-46) and Block Island (IOTA NA-31). Also, W4's have chances too if they're down there in the Florida Keys (IOTA NA-62) or the Tampa Bay Peninsula group (IOTA NA-34).

If you're not satisfied being a passive type and want to be both a DX- and Island-object at the same time, you can do like Mario, WB2CZB, or Paula, WB9TBU. Thus, as announced in the July Quarterly, Mario and friends went to Saba Island (PJ) in the Netherland Antilles (IOTA SA-06) while Paula and friends went to the Virgin Islands (IOTA NA-23) and signed /KP2. I'm sure they added to the island-counts of many DXers and had a blast doing it. So you see there's more and more to DXing the closer you look, certainly enough to keep QRPers busy for quite a spell. So give it a try and see what kind of the fun and excitement you'll have.

These charts were accidentally omitted from the Propagation & DX column in the October 1988 issue of The Quarterly. More charts are on page 14.

RISE OF SOLAR CYCLE 22 COMPARED TO PREVIOUS CYCLES



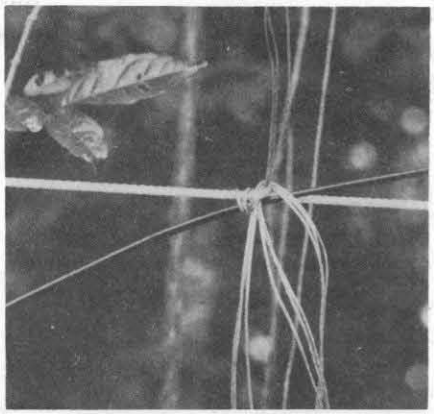
NOAA Space Environment Laboratory, 01 Nov 1988

The KP2 QRP DXpedition

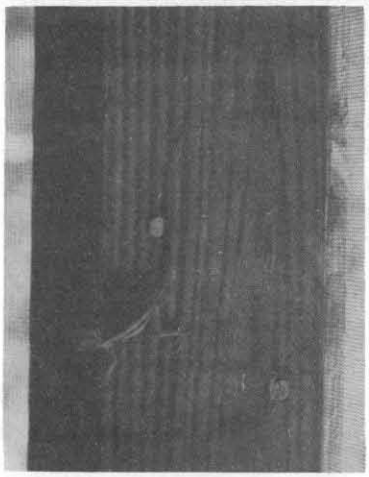
Paula Franke WB9TBU and Larry Maso NU4B

Tired of the drought, in terms of both rain and DX, Paula WB9TBU and Larry NU4B decided to head south to a more congenial climate and activate a QRP country at Maho Bay, St. John, American Virgin Islands. Paula arrived late in the afternoon, Thursday, July 7, and Larry arrived in the middle of a thunderstorm the evening of Saturday, July 9. For a week, the pair happily revelled in their status as "choice DX," working all continents and more than 30 countries.

Standing at the top of the mountain provides an unobstructed view of Maho Bay.



Stringing antennas in a heavily forested area provided interestind logistical problems. On the plus side, there was no lack of natural materials to use as tie-downs.



The QRP lizard was a handy critter to have around to take care of the QRO insects.

Larry NU4B discovers one of the problems encountered when the rope won't uncoil cooperatively.

Paula WB9TBU raking in the DX.

The QRPers leave their graffiti on the beach.

Letters to the Editor

Harry Blomquist—one view...

I am also in agreement with Ade Weiss and his comments in the October 1988 issue of The Quarterly about Harry Blomquist. When I first joined the QRP ARCI, I thought I was getting into a real QRP group, QRP being less than 5 watts, etc. But upon receiving the club award information, I found that QRP to them meant 100 watts. I was also disappointed to find very little homebrew QRP information in the QRP ARCI newsletter. It was not until K8IF started to make a real QRP push that I became interested again. Maybe K8IF should have "spun off" with a new group that was interested in real QRP.

I also find offensive the appearance of "K6JSS' on the unofficial new club logos, letterheads and QSLs. Some of the others that I talked to don't care for it either. I think we should put it up for a vote by the club members to decide if they want K6JSS on the logo or stick with the old one.

D.A. "Mike Michael W3TS
Halifax, Pennsylvania

...another view....

As a charter member of QRP ARCI (#11), I strongly disagree with Ade Weiss' letter in which he attempted to defile Harry's name and reputation by painting him as being a less than genuine QRPer. Let's set the record straight:

1. Harry founded the QRP ARCI itself, not the "precursor" of it. The club has been continuous since 1961 to the present. The current QRP ARCI is the club Harry founded. Attempts to characterize our club as QRO ARCI, as Ade did, is a terrible distortion of the truth.

2. Ade's reference to "genuine" QRP as opposed to 100 watt QRP is way off the mark. QRP is, by it's very nature, relative: 100 watts is QRP vs. 1000 watts; 25 watts is QRP vs. 50 watts; 1 watt is QRP vs. 2 watts. This series could be continued as infinitum. What is "genuine" QRP? Whatever the consensus of the membership of our club happens to be at the time the question is asked. In the beginning it was 100 watts (input), then it became the currently accepted 5 watts (output). This limit is relative and subject to change to a higher or lower level if the membership so decides. Nobody, including Ade Weiss, holds a monopoly on QRP "genuineness". If we had to choose somebody who most embodied the QRP spirit, we would have to make it Harry Blomquist, without whom our club would not exist.

Ade's letter is divisive and disruptive to the club. We are in a period of growth and need unity in order to sustain our expansion. If we are divided among ourselves, how can we expect to attract newcomers to the QRP movement? Let's put our differences aside for the good of the club. Petty factionalism has no place in the QRP movement.

Luke Sheridan NB3V
Wilkes-Barre, Pennsylvania

...and a compromise.

I really don't have any heartburn over excising the offensive (to at least one person) K6JSS, since it is in fact true that he didn't found what we know today as the QRP Club. Your point is equally valid, about our heritage. Perhaps another equally good design would delete the 1961 and instead have both the calls of K6JSS and K8IF, since in a sense they are both founders of the club. Or, perhaps, have both dates on the logo with no call signs. (A problem with that is there probably isn't a really concrete date we could point to as the turning point. My impression is that it was spread out over a couple of years.

Mike Czuhajewski WA8MCQ/3
Jessup, Maryland

A Need for Gear

There is a radio amateur in need of a basic station. This humble ham is on the Navajo Indian Reservation at this address: Hurley Parkhurst NL7GT, P.O. Box 2773, Window Rock, AZ 86515.

Mr. Parkhurst has done extensive experimenting with crystal detectors on the medium wave band. His current receiver is an RS-DX-302. A battery rig is his only egress. I thought a certain plea in The Quarterly would garner further help (i.e. gelcell batteries, solar panel, hand key, transmitter.)

Arnold Timm KA0TPZ
Minneapolis, Minnesota

1988 Index to The Quarterly

Compiled by Chuck Dobbins KA5PVB
1902 Mission Creek Circle
Houston, Texas 77084

This index includes the issues January 1988 through October 1988. The index for issues January 1980 through October 1987 appeared in the January 1988 issue. If any members have issues prior to 1980, Chuck would appreciate copies for photocopying and indexing.

New Member/ Renewl Data Sheet

Call_____ Age_____
Recommended by:_____
License Class_____
Other Calls Held_____
Bands Most Used_____
Please circle your interests and elaborate if desired on a separate sheet. Thanks!
Ragchewing, DXing, Contests, Traffic, Awards, Homebrew, Experimenting, CW, SSB, RTTY, ATV, Packet, VHF/UHF, Satellite, Other

Do you plan to participate in club activities? Y/N
Would you like to be a club officer/director? Y/N
Do you have access to duplicating equipment? Y/N
Are you interested in our awards program? Y/N
Have you applied for any of the club awards? Y/N
Are you in favor of QRP calling frequencies? Y/N
Are you in favor of member QSO parties? Y/N
Would you help write for the Quarterly? Y/N
What subjects?
What QRP awards/achievements have you won?
Why do you run low power?

[ ] Renewal (U.S. $10, DX $12) [ ] New Address
[ ] New Member (U.S. $12, DX $14) [ ]New Call

Name_____Address_____

City_____State/Country_____Postal Code_____

Amount Enclosed_____QRP ARCI #_____Callsign_____

Please make your check or money order payable to:
QRP Amateur Radio Club, International
Please Do Not Send Cash

Mail to: Bill Harding, K4AHK
10923 Carters Oak Way
Burke, Virginia 22015 USA

QRP #_____Inc Rec_____Apl Rec_____
List File_____MCert_____Rep Cpy_____

Winter Net Schedule

TCN*	14060	W5LXS	Sunday	2200 Z
SEN**	7030	K3TKS	#Wednesday	0100 Z
GSN	3560	W5LXS	#Thursday	0200 Z
GLN	3560	K2JT	#Thursday	0200 Z
NEN	7040	W1FMR	Saturday	1300 Z
WSN-40	7040	W6RCP	Saturday	1700 Z

* On weekends of major contests, TCN will meet one hour later.
** If conditions on 7030kHz are poor, QSY to 3535 at 0130 Z (0030 Z Spring/Summer).
# Evening of the day before for W/VE

Other QRP Nets

MQRP	3535	K8JRO	#Wednesday	0200 Z
VEQRP	14060	VE6BLY	Sunday	1900 Z

Every Sunday QSO Party

UTC	CW	SSB	Novice
1400-1600	14.060	14.285	
1600-1700	21.060	21.385	21.110
1700-1800	28.060	28.885	28.110
1800-1900	7.040	7.285	7.110
1900-2000	14.060	14.285	
2000-2100	21.060	21.385	21.110
2100-2200	28.060	28.885	28.110
2200-2300	7.040	7.285	7.110
2300-0000	14.060	14.285	
0000-0100	7.040	7.285	7.110
0100-0300	3.560	3.985	3.710

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