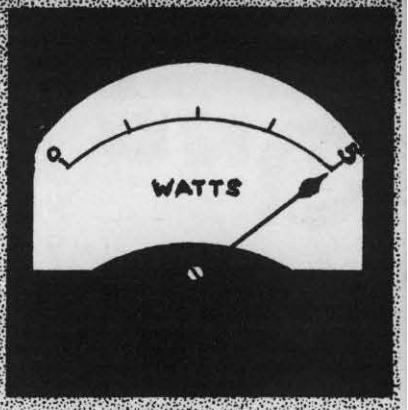
QRP QUARTERLY



QRP Amateur Radio Club International's Newsletter April 1981 Vol. 19, No. 2

THE PRESIDENT'S FORUM

By Tom Davis - K8IF
QRP ARCI President

Thank you for all of your inspiring and encouraging letters! Many of you were pleased with the actions we have taken on our definition of QRP and QRP awards. However, there were several members who were not pleased that we are retaining the power limit as a membership requirement. Nor were they pleased with a comment I made in the January issue.

My comment on "part time" QRPers was not meant to generate bad feelings. Indeed, part time may have been a poor choice of words. I know that we have many members who do not operate QRP all of the time; and we value their contribution to the club just as much as we do the contributions of so-called "full time" QRPers.

I was trying to say that in retaining a power limit as a membership requirement, we were reflecting the wishes of a majority of our active members. And we also were in keeping with the spirit of the club founders, who felt that such a limit would help cut stateside QRM on a somewhat continuous basis, even if only among 4,800 hams.

Having a power limit also makes us unique among most QRP clubs, which do not have any power limit for membership. But in reviewing my comment, I can appreciate why it was misleading.

Frankly, I believe the club's interests would be better served by eliminating any power limit as a membership requirement. Must we enforce a power limit to apply our principle of "the least power necessary"? Perhaps a review of the issue by the members and the club's board of directors would be in order. In fact, it seems appropriate to focus on this one issue because it directly affects our entire membership and the growth of the club. For the time being, we will continue to use the power limit requirement. But I am scheduling a review of it for January 1982.

April and October are membership drive months. So let's get the drive underway and sign up new members! You'll find a copy of the club's membership application (and by-laws) elsewhere in this issue. Make photocopies of the application and send them out with your QSLs. On occasion, you might include a photocopy of one of the newsletters too. The club's officers currently are sending to long-inactive members an invitation to renew their subscriptions to the Quarterly. We have nearly 4,800 members, and there's no reason why they all can't be active! The club member who contributes the most towards renewals and new members will be recognized by the club. So get on the air and spread the word!

For those of you thinking about the upcoming Dayton '81 Hamfest, don't think. Go! We will host a QRP forum, scheduled for April 25, at 8:45 a.m. in Room 3 at the convention. And there will be a QRP hospitality room on

(Please turn to Page 3)

A PEEK INSIDE:

QRP Quarterly is the official journal of the QRP Amateur Radio Club International, Inc., and is published four times a year: January, April, July, and October. The QRP ARCI is a non-profit amateur radio organization dedicated to increasing worldwide enjoyment of QRP operation and experimentation (QRP, as defined by the club, is 5 watts output CW, 10 watts output PEP). Members agree to voluntarily limit their transmitter power to 50 watts output CW, 100 watts output PEP, except for public service work, where higher power may be necessary. Current club membership 4799, QRP Quarterly circulation 616.

Initial membership fee of $4 ($5 for DX applicants) covers lifetime membership plus first four issues of the QRP Quarterly. Membership information is available from the secretary-treasurer (see roster below). Subscription renewals are $3 ($4 for DX subscribers) for four issues. Expiration notice appears in red (rubber stamped) on the mailing cover of final issue. Expiration date also appears on mailing label, following QRP number: i.e. 4174-4/81 means member 4174's subscription expires with October issue, 1981 (or fourth quarter, 1981). Renewals must be received by editor by the 15th day of the month prior to month of publication for continous service. Otherwise renewal begins with the next issue. Send renewal notices, changes in call, or address changes to the editor (see roster below). PLEASE MAKE ALL CHECKS OR MONEY ORDERS PAYABLE TO: QRP Amateur Radio Club International Inc. PLEASE DO NOT SEND CASH. New members will receive first issue following receipt of their application provided it is received at least 15 days prior to month of publication. Otherwise, their subscription begins with the next issue.

Letters to the editor are welcome. Not every letter can be published, and the editor reserves the right to edit letters to conform to space limitations. Those desiring a reponse from the editor, officers, and directors should enclose an SASE with their letter. Construction projects or articles of general interest are always welcome. Manuscripts should be typed, double space, and all circuit diagrams should be clear and include all parts values. The editor and club are not responsible for testing projects that appear in this publication. Please include name, call, and phone number on all manuscripts and mail to the editor.

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Name _____ Call _____ New call _____
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(The President's Forum - continued)

April 24 at 7 p.m., Room 167 at the Ramada Inn North, Dayton, Ohio. The guest speaker at the forum will be Ade Weiss, WØRSP. Also look for WA2JOC, WA3ZBL, K5VOL, K8IF.

And finally, get that summer gear QRV because it's time for QRP Field Day 1981! The Milliwatt, MI-QRP-C, and QRP ARCI are jointly sponsoring FD with three categories. If you have been thinking about running one watt out, or multi-op transmitters, this is the year to go for it! See the QRP contest column for details!

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THE EDITOR'S SOAPBOX

By Peter N. Spotts - N1ABS
QRP Quarterly Editor

Now that the club has firmly established its position with respect to QRP operating levels, we need to take a serious look at whether the club is best served, and best serves, by having a power limit as a membership requirement.

Why does the QRP ARCI exist? Initially, as I understand it, the club was formed by a group of amateurs who were dedicated to reducing stateside QRM. But in the ensuing years, the so-called QRP movement has grown and diversified. It demands an organization or organizations that can satisfy the desires of full time or part time QRP buffs for clearly identifiable QRP activities, information about QRP operation, and for useful and suitable pieces of do-it-yourself QRP gear.

If we wish to work toward fulfilling such roles, then the existence of a power limit as a membership requirement clearly is counterproductive.

A club continually needs to turn to its membership for fresh ideas and a more precise sense of its members' needs in order to begin to grasp what is necessary to meet the demands of the QRP fraternity. Anything that places a cap on that membership places a similar cap on the club's reservoir of ideas and its ability to respond to the needs of hams interested in QRP work.

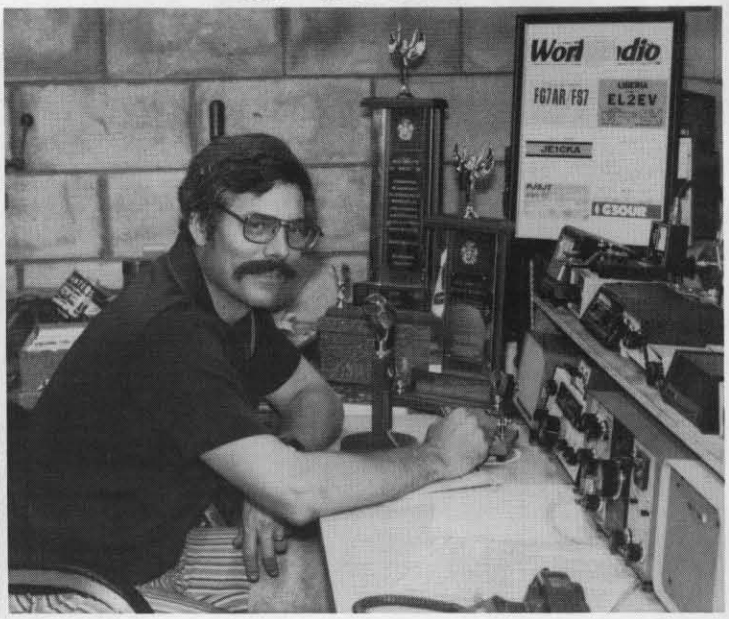
Because this club has the potential to be a significant source of information for and encouragement to the fledgling QRP buff, we need to make sure that we are receptive to his or her interest without making that individual feel unacceptable for not meeting an arbitrary power limit requirement.

We also want to calm any misgivings or concerns someone may have about going QRP. That purpose is not served by drawing a power limit line in the sand and then daring the ham to cross it.

What types of people would join the club if we abolished the power

(Please turn to Page 10)

QRP QUARTERS



Meet William "Bill" Dickerson, WA2JOC, who writes: This is my bare-walled shack as it now appears. The equipment includes an Argonaut, Heath HW-101 plus frequency counter for digital readout, and the usual accessories. I use battery power for the Argonaut and also, for emergency use, with the HW-101. I am the emergency coordinator for Monroe County, Mich. I have some solar cells, but not enough to keep the batteries charged. The awards include DXCC QRPp #10 (all 2xCW), DXCC QRPp #16 (all 2xSSB). According to Ade Weiss, who issued the awards, I am the first to receive one for two modes. The framed QSL cards include the six cards for contacts made for my Worked All Continents QRPp. All six contacts were made in less than 11 minutes!

How about a shot of you and your shack? It doesn't matter how modest or chrome-bedecked it is. Send a clear, black-and-white photo of your station to the editor.

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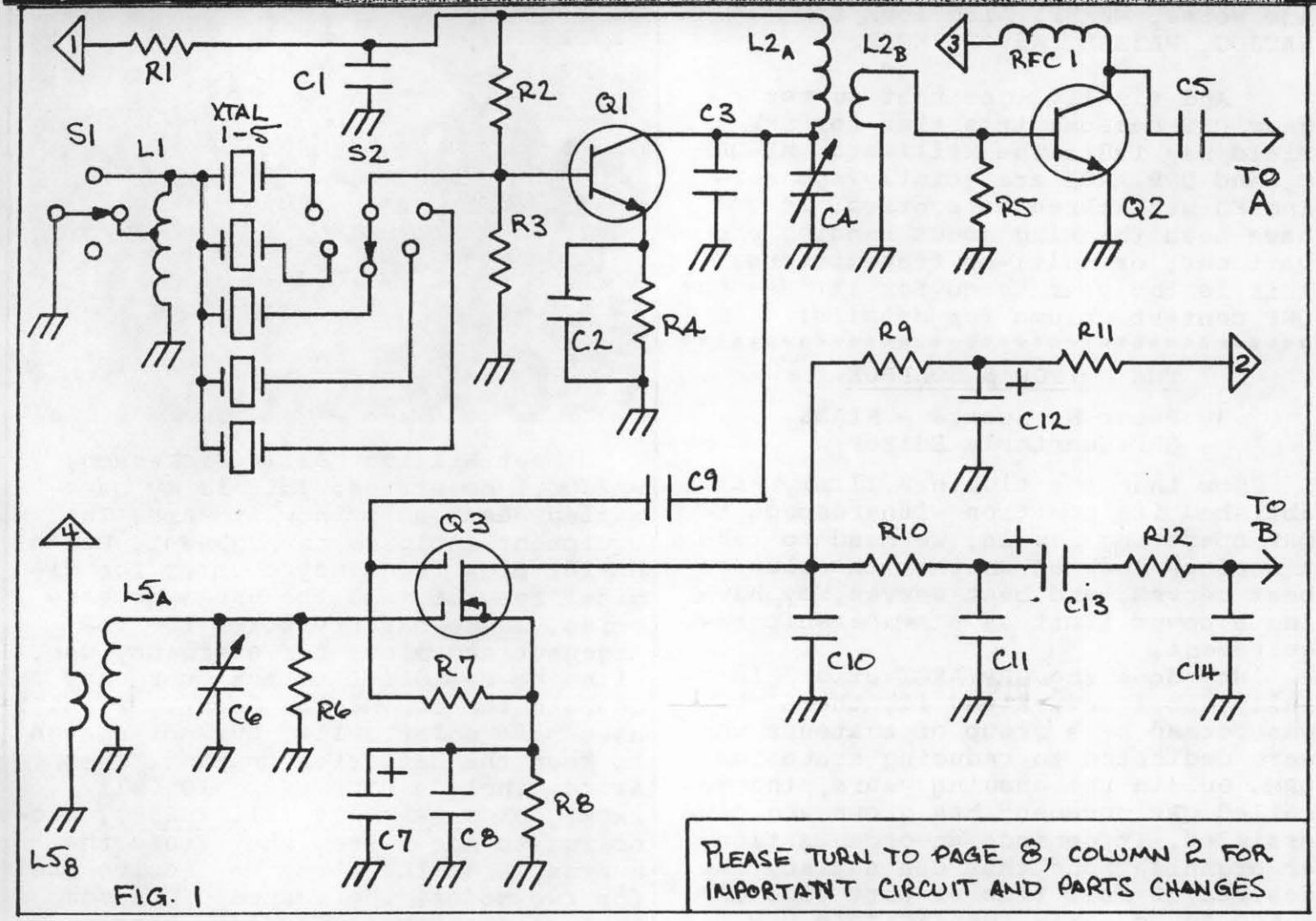

FIG. 1

PLEASE TURN TO PAGE 8, COLUMN 2 FOR IMPORTANT CIRCUIT AND PARTS CHANGES

ROCK STEADY

By Thomas Davis
K8IF

Many of us realize the advantages of crystal controlled transmitters. But we seldom use them anymore because of the luxury afforded by VFO-type rigs such as Ten Tec's Argonaut or the Heathkit HW-8. While these may fill most of our needs for a QRP rig, they can fall short on requirements such as ultimate portability and low power consumption--factors that many of us may have given thought to at one time or another.

The "Rock Steady" design is meant to serve these last two requirements. So before you read on, ask yourself: What am I doing with those old rocks? When is the last time I homebrewed a rig? Couldn't I use an emergency rig? If any of these questions appeal to you, then read on!

The concept of this rig evolved several years ago while I was building a single stage and a two-stage transmitter. A 2" x 3" x 5" cabinet was used. And I might add it is still used though now (after much perforation) it approaches the appearance of Swiss Cheese! A super-regenerative receiver also was housed in the cabinet. All of this met the size requirement, but the performance left much to be desired.

After many solder burns, I decided to attack my idea a bit more seriously. The above circuit is the result. A simple oscillator is used both for transmit and receive, with a switchable VXO offset for the receive mode. Q1 acts as the oscillator for the product detector and as the oscillator and driver for the final amp (Q2). The oscillator runs at all times, while

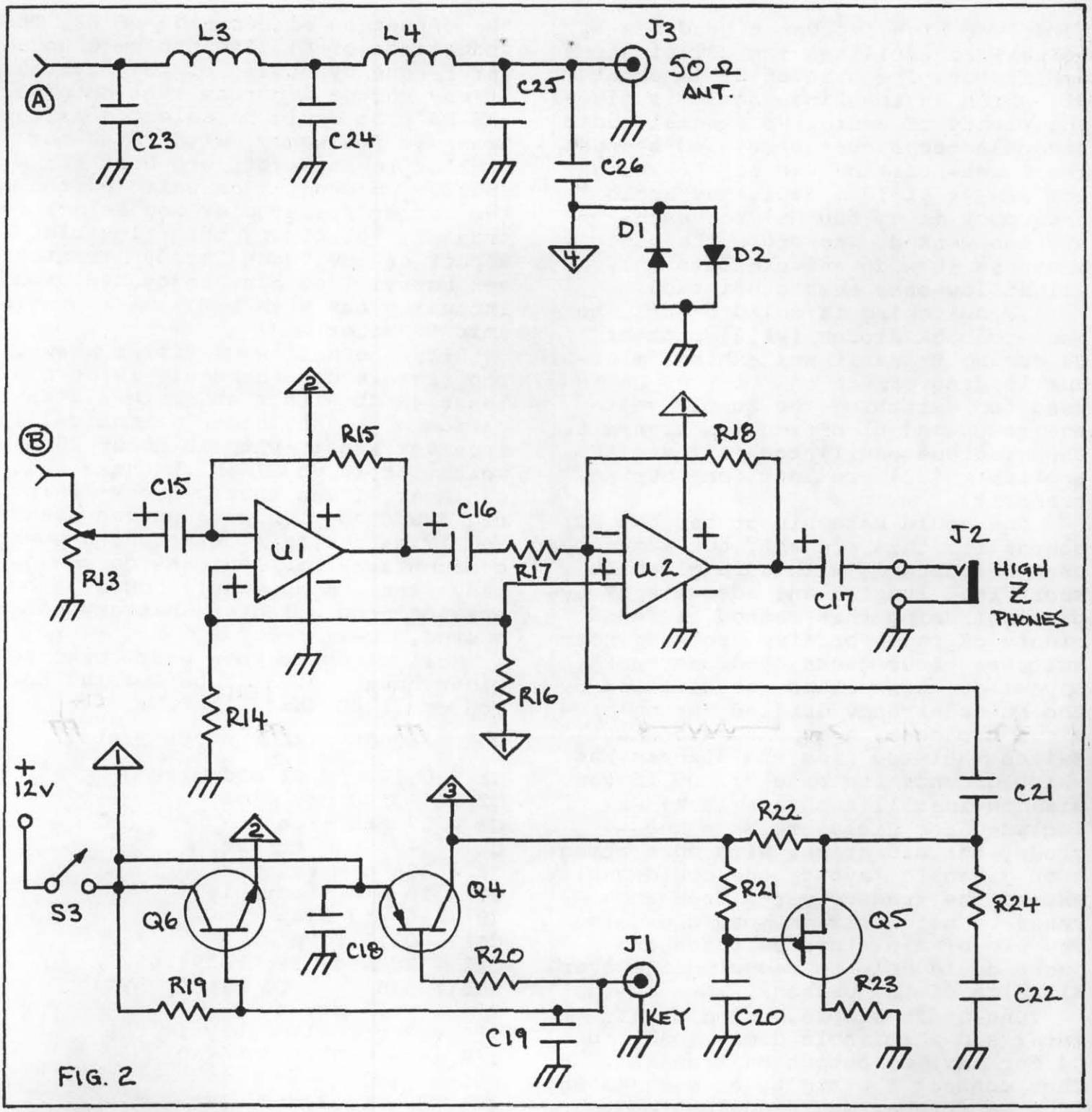

FIG. 2

the final is keyed during transmitting. The result is a clean and stable signal. Assuming an output impedance of 50 ohms at the collector of Q2, a simple half wave filter was applied for a harmonically clean signal with a 50 ohm antenna. Power output is more than 1.5 watts, while the input power nears 3 watts. This gives the transmitter a bit more than 50% efficiency. Since operating at home or in the field was desired, and since many keyers provide a "low" output for solid state gear, Q4 was incorporated to key the final and the sidetone oscillator Q5. Q5 is used as a relaxation type oscillator--simple but effective. The frequency of oscillation can be tailored to suit individual tastes by changing the RC constants as desired (C20 and R21).

A dual-gate MOSFET was chosen for the product detector because of its availability and performance. Audio amplification is achieved through the use of 741 Op Amps. To keep the audio gain within reason, U1 acts as a preamp with a voltage gain of 260, while

U2 drives high impedance headphones, as well as amplifies the UJT sidetone oscillator. The gain of U2 is about 31, which in the final analysis gives you plenty of audio. No special audio bandpass techniques were used because the three-position VXO offset would not always yield a dedicated audio frequency (i.e. 600 Hz) for each station worked. Therefore the audio bandpass is wide and exhibits only slight low-pass characteristics.

TR switching is solid state. The back-to-back diodes (D1,2) protect Q3 during transmit and exhibit minimum loading effect on receive. Q6 is used for switching the supply voltage to Q3 and U1 off during transmit. The sidetone oscillator (Q5) and AF amplifier (U2) are left "on" during transmit.

One could make his or her own PC boards for this project, but I merely used breadboard, with care given to short lead lengths and adequate RF bypassing. Using this method, I found plenty of room for five "rocks", four switches, four jacks, and one "pot". Layout of these items was dictated by the holes already drilled during previous projects. A momentary contact switch (deleted from the diagram but which grounds the base of Q6 if you wish to install such a switch) was included for field use as a key--crude, but effective. With more attention given to layout, one could easily extend the transceiver's frequency range by using six or more crystals. The use of miniature switches and jacks could help in reducing the overall size of the package.

Tune-up is simple. Using a watt meter and a suitable dummy load, tune C4 for maximum output on transmit. Then connect the rig to an antenna and tune C6 for maximum signal strength.

Operation will deserve attention on receive because the receiver is a direct conversion unit. But this poses no great difficulty. For instance, frequency 2 (F2) could be chosen as the transmit frequency. Switching to F1 or F3 will then offset the VXO for receive on either the low or high side of zero beat. Just be sure to return the switch to F2 before transmitting! Coil L1 is tapped to suit the desired offset. F1 and F3 are measured first, then F2 is chosen by the tap placed on L1. In this case, 750 Hz was chosen as the offset on either side of F2. The inductance of L1 also can be changed for frequency "pull" of the crystal. It may become apparent that both F1 and F3 also could be selected as the transmit frequency, with F2 as the high or low side of zero beat for receive, depending on which of the two former frequencies you select for transmit. Utilizing this flexible aspect of the "Rock Steady" transceiver has yielded many enjoyable QSOs, including one with a W7 in Washington amid 40 meter QRM!

With the half wave filter shown, the rig's second harmonic is down at least 40 db with even further attenuation of higher order harmonics. The receiver sensitivity is about 20 microvolts for 10 db S/N+N, because what I can hear, I can usually work! This rig draws about 250 ma during transmit and 17 ma during receive. With power consumption this low, one can enjoy many (and I mean many!) hours of operation from a lantern battery power source.

Well, I don't know what rocks you might have, but I'll be looking for you on 7.040 Mhz!

ROCK STEADY parts list:

C1,5,8,10 - 0.01 mfd disc
C2,26 - 100 pfd mica
C3 - 27 pfd mica
C4 - 3-30 pfd trimmer
C6 - 365 pfd trimmer
C7 - 10 mfd electrolytic
C9 - 10 pfd mica
C11 - 0.1 mfd disc
C12 - 20 mfd electrolytic
C13,15,16 - 1 mfd electrolytic
C14 - 0.05 mfd disc
C17 - 2 mfd electrolytic
C18,19 - 0.001 mfd disc
C20 - 0.033 disc
C21,22 - 0.03 mfd disc
C23,25 - 430 pfd mica
C24 - 820 pfd mica
D1,2 - 1N914 diodes
J1,3 - phono jacks
J2 - phone jack
L1 - 48 turns of #26 wire on T-50-2 toroid coil form
L2A- 40t, #26, T-50-2; L2B - 4t, #26, over L2A
L3,4 - 14t, #26, T-50-2
L5A - 21t, #26, T-50-2; L5B - 3t, #26, over L5A
Q1 - 2N2222
Q2 - 2N3553

Q3 - 40673 or equivalent
Q4 - 2N3906
Q5 - 2N4871
Q6 - 2N3904
R1,5 - 100 ohm, ½w
R2,7,10 - 10k, ½w
R3 - 4.3k, ½w
R4 - 390 ohms, ½w
R6 - 22k, ½w
R8,11 - 220 ohms, ½w
R9,23,24 - 1k, ½w
R12,20 - 1.2k, ½w
R13 - 25k potentiometer
R14,16 - 6.8k, ½w
R15 - 390k, ½w
R17 - 1.8k, ½w
R18 - 56k, ½w
R19 - 4.7k, ½w
R21 - 68k, ½w
R22 - 3.9k, ½w
S1 - single pole, three position rotary switch
S2 - single pole, five position rotary switch
S3 - SPST toggle switch
S4 - SPST momentary contact or push button switch, normally open (optional, grounds base of Q6)
U1,2 - 741 Op Amps
XTAL 1-5 - 7 Mhz crystals

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NOTES ON THE SHORT DIPOLE

By C. F. Rockey
W9SCH

One of the advantages of the dipole antenna fed with a tuned, open-wire transmission line (the center-fed zepp) is that the radiating wire need not be cut to exactly one-half wavelength in order to perform effectively.

That such an antenna radiates well on its upper harmonic frequencies--where it is much longer than a half wavelength--has been well known for at least 50 years. But that the radiating "flat-top" can be appreciably shorter than one-half wavelength and continue to perform quite satisfactorily is not commonly known among radio amateurs. Yet to those who wish to use the lower frequency bands but are limited in available antenna space, this is good news!

I enjoy operating in the 3.5 Mhz "80 meter" band. Yet, in the past, I seldom have had the real estate that would permit a full, 130-foot half-wave dipole. However, experiments revealed that a center-fed zepp with a radiating wire longer than about 80 feet (roughly one-third wavelength) worked very well on 80 meters, even at QRP power levels. On the other hand, a 40 meter antenna of the same type and location, but the usual half-wavelength long, was most unsatisfactory on 80. This is in contradiction to a number of past antenna literature references. Indeed, this discovery once got me into an amiable, small controversy with a well-known antenna authority on the West Coast.

But the fact is clear in my mind: A dipole (properly tuned) that is about one-third wavelength long will perform satisfactorily, while one much shorter (say one-quarter wavelength) will not.

That this is true also is attested to by several manufacturers, who now market antennas of the center-fed zepp type with 100-foot "flat-tops". These are recommended for 3.5 Mhz use, as well as for use on the higher bands. These seem to work as advertised.

So much for the experimental result. But what is the theoretical justification for my findings? I assumed that the radiation resistance of a dipole is about twice that of a vertical wire half as long as the dipole. The radiation resistance of short vertical antennas have been tabulated in the ARRL Electronics Data Book. (ARRL, 1976)

Total dipole length for use at 3.6 Mhz	Assumed radiation resistance at 25 ft. height	Radiation efficiency assuming 20 ohm loss resistance	Db loss with respect to a ½ wave dipole
40 feet	3.4 ohms	14.5%	6.2
50 feet	4.1 ohms	17.0%	5.8
60 feet	6.0 ohms	23.1%	4.4
70 feet	8.5 ohms	29.8%	3.2
80 feet	11.0 ohms	35.5%	2.6
90 feet	17.0 ohms	45.9%	1.5
100 feet	19.0 ohms	48.7%	1.2
130 feet (½ wave)	35.0 ohms	63.6%	0.0

But the calculations on which these figures are based assume "free space" conditions. In order to deal with these realistically, we must allow for the effect of the Earth. I am speaking here of an 80 meter antenna, substantially horizontal, and 25 feet above the ground. Referring to the curve on page 70 of the Data Book, we find that the radiation resistance of such a "real" antenna will be about one-half of the theoretical value. Making the appropriate calculations, we can tabulate some data, which appears in the table on the preceding page.

We calculate the radiation efficiency by using the formula:

$$\% \text{ eff.} = (100) \times \frac{R_{rad}}{R_{rad} + R_{loss}}$$

R_{rad} is the radiation resistance, and R_{loss} is assumed to be 20 ohms. The radiation loss is primarily the effect of trees, buildings, and other poor dialectrics in the field, as well as the losses in the Earth beneath and around the antenna.

It may suprise some people to observe that the radiation efficiency of even a half-wave dipole is actually much less than 100 percent. But such is indeed the case. (After all, what <u>is</u> perfect in this vale of wrath and tears?)

As we examine the data in the table on the preceding page, they seem to suggest a few points. For instance, only by acute observation can the ear detect a 1 db difference in signal level. Indeed, it is commonly stated that a 3 db change in sound level is the smallest that will ensure a definitely noticeable effect. If so, then for reception <u>by ear</u>, a carefully tuned zepp antenna between 70 and 80 feet long will represent the minimum length that will provide a signal that "sounds like" it came from a full-sized half-wave dipole.

As the dipole becomes shorter, other effects begin to appear which are not uncovered by our simple study. For one thing, the capacitance of the wire becomes less, so less current flows at the center of the shorter dipole. Furthermore, the decreasing radiation resistance as the wire grows shorter results in higher RF voltages on it. This increases the dialectric losses in the insulators and the surrounding objects. This probably decreases the radiation efficiency even more than our calculations reveal. So, however one looks at it, a dipole for use on the 80 meter band should not be shorter than about 80 feet. But it is much easier to get up an 80 or 90-foot wire on the average ham's real estate than it is to erect a 130-foot half-wave--especially if the ends are bent down or an inverted vee arrangement is used.

I hope that this will enable a number of the gang to get on 80 meters who **weren't** able to do so before (or so they thought). And with the 40 meter band filling up with foreign BC stations, this should be a real blessing to many.

Of course, if you can put up the full-sized half-wave dipole, by all means do so. But if you can't, put up at least 80 feet, feed it with a good open-wire line to the center of the radiator, use a simple antenna tuner (just a coil and an old variable capacitor salvaged from Aunt Minnie's neutrodyne), and you're in business. Try it!

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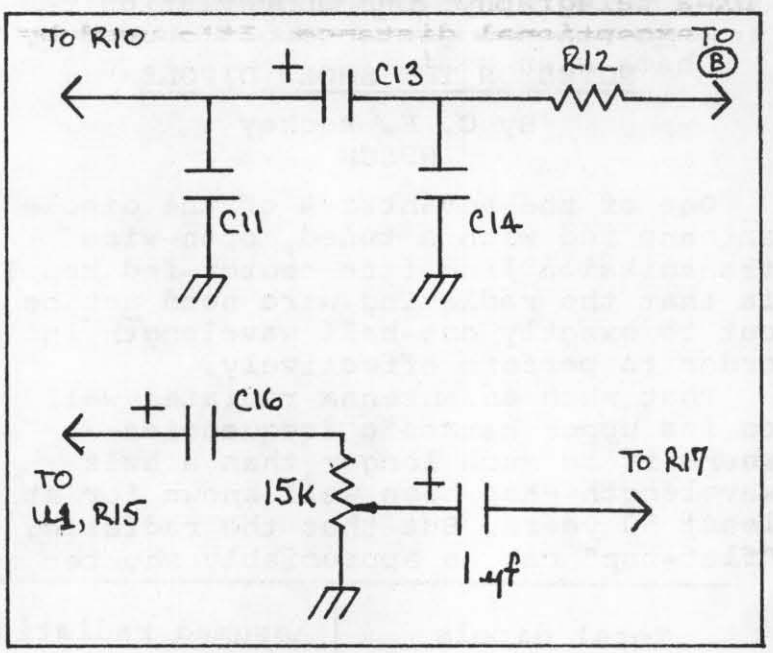
LATE CHANGES TO "ROCK STEADY"



Some last minute circuit and parts value changes were called in to update K8IF's "Rock **S**teady" rig:

Change U1 from a 741 op amp to an LM307. R12 is changed from 1.2k to 3.9k. C14 is moved and reconnected as shown above. R15 is changed from 390k to 1 megohm. R13 is dropped from the circuit, and point B becomes the positive end of C15. Change R18 from 56k

to 82k. C21 changes from .03 to .005 mfd. Finally, a 15k pot is inserted as shown above between C16 and R17, along with a 1 mfd electrolytic. The changes, according to K8IF, give U1 a gain of 256 and U2 a gain of 45.

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BEGINNER'S CORNER

By Peter N. Spotts
N1ABS

This column will run from time to time, based on requests from Novices or neophyte QRPers for information on QRP operation or ham radio in general.

The inspiration for this feature came from M.T. and Jewel Morgan, KA9AYQ and KA9AYR respectively, who live in Wisconsin. The Morgans find themselves in the unfortunate geographical position of living 40 miles from the nearest ham radio club. (I think I got that right, didn't I, M.T.?) The Morgans were troubled by some abbreviations they'd seen, which weren't explained.

So here's the list, with the best definitions I could find while on my coffee break:

DX-a telegraphy (CW) abbreviation for exceptional distance. It's used by hams when referring to foreign countries (although for awards purposes, Alaska and Hawaii also are considered DX). The only reason I can see for the shorthand being DX instead of XD is that it may have originated in Europe, where the phrase might have been distances exceptionale, or some such nonsense.

DXCC-DX Century Club. An award offered by the American Radio Relay League (ARRL) and other clubs for confirming contacts with 100 or more countries.

DVM-digital voltmeter. A DVM uses light emitting diode (LED) or liquid crystal diode (LCD) displays instead of a meter to indicate voltage, current, or resistence.

FET-field effect transistor.

GaS-gallium arsenide. GaS is a semiconductor compound, as opposed to germanium or silicon, which are semiconductor elements. GaS is used in transistors such as a GaSFET. (How's that for combining a couple of abbreviations!)

MOX-I'll have to pass on this one. Mouth operated relay, maybe? Perhaps someone else out there can help out on this one.

MOS-(just in case this is what you meant by MOX) metal oxide semiconductor

PEP-peak envelope power. The power contained in the amplitude peaks of a single sideband signal, or SSB signal.

PC-printed circuit.

QRPp-I might get some arguments on this one, but QRPp indicates a transmitter output power of less than one watt.

QSK-the CW "Q" signal for "Can you hear me between your signals?" It also refers to break-in keying, which allows a transmitting station to hear signals between the CW characters it is sending.

RTTY-radio teletype. When used in conversation, it's pronounced "ritty", although to us purists, RTTY should be used only where an abbreviation expedites communication. When talking, say "teletype," thank you!

VFO-variable frequency oscillator.

VSWR-voltage standing wave ratio.

VTVM-vacuum tube voltmeter.

VOX-voice operated relay. When operating SSB, the VOX keys the transmitter when you begin speaking into the microphone and keeps the transmitter keyed until you stop talking or your XYL pulls the plug, whichever comes first.

WAC-worked all continents. An operating achievement award offered by the ARRL and other clubs for confirming contacts with one country on each of six continents: North America, South America, Europe, Africa, Asia, and Oceania (the Pacific).

WAS-worked all states. Similar to WAC except that it recognizes confirmed contacts with each of the 50 states in the US.

A letter from another reader dealt with the frustration of calling CQ while operating QRP, and not getting any response. Well, here is this operator's rule about that: don't call CQ, unless...

First, the rule and rationale, then the exceptions.

Remember that among the hundreds of signals floating through the ether, we QRPers don't always have the loudest roars. This doesn't call for un-

plugging the radio. It merely calls for a change in tactics. Instead of pounding out unanswered CQs for hours, tune in on your quarry while he is still involved in a QSO. Then, when he signs that final time, give him a call.

Calling CQ is a bit like seeing an aquaintance in a large, noisy crowd and calling, with a weak voice, "Hey, you!" The chances are that with something less than a stentorian voice, you'll be ignored. But if you call out, "Hey, Bergstrom!", even if your voice is weak, Bergstrom is likely to stop and give a second listen--if he didn't hear you well enough the first time. Then, on your second shout, he'll tune in on you and -- assuming you don't owe him any money -- he'll come over for a chat.

I have found that this method is infinitely preferable to calling CQ, and definitely more successful. By the way, one side effect of this method, at least for CW buffs, is an improved ability to copy code. Why? Because you have to be able to follow the QSO in progress to know when to place your call.

Now for the exceptions: Obviously, if you're involved in a QRP activity or are trying to stir some up on QRP frequencies, CQs are in order. After all, if thousands (?) of QRPers are waiting for someone to indicate their presence, somebody has to make the first move! And CQs also are in order during contests, when diehard 'testers will dive on even the weakest signal like, like, oh well, you fill in the blank!

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(The Editor's Soapbox - continued)

limit?

A certain number will be "joiners", those who join just to say they are members of such-and-such a club. At worst, these individuals are harmless. They in no way inhibit members with a bona fide interest in the club from exercising that interest. And at best, the Joiners are contributing money, if not ideas, to support the club's activities.

Some people might join to support one type of activity, such as contests, which may account for the only QRP operating time these people care to have. Even though they join to support only one activity, they should be enthusiastically received.

But in the main, the club by definition is geared toward QRP interests. As a result, it is likely to attract people who have at least a curiosity about QRP. More likely, it will attract to its ranks those who have a deep and genuine interest in QRP operation.

To those who might argue that the club's uniqueness or integrity might be compromised by eliminating a power limit requirement, a couple of simple examples are in order:

• The American Automobile Association's purpose, integrity, or uniqueness is not compromised if on one vacation I decide to drive, and so make use of the AAA's various services, while on my next trip I decide to fly. They have no membership requirement that I must always drive when I travel.

• A repeater association's reputation is not sullied if, after I join it, I remain active on the HF bands and use other repeaters. Here too, there is no membership requirement that I restrict my ham activities to operating on that repeater.

In each case, the uniqueness of the organization is not defined by its membership requirements, but by the array of services it offers. And the quantity and quality of these services are made possible in each case by a large, diverse membership.

One corallary I've heard to the "compromising" argument is that eliminating the club's power limit as a membership requirement would invite cheating on club awards. Well, amateur radio is, for the most part, based on the honor system. In fairness, we have to assume that those joining the club will honor the system. As for those who may cheat, their folly doesn't bother my conscience. Their dishonesty stares them in the face each time they look at their ill-gotten certificate.

Enough said. If we truly want to provide a service as well as an outlet for amateurs interested in QRP work, and if we want to introduce others to the branch of Hamdom that we QRPers so enjoy, let's drop the barriers. Barriers are structures born of fear, not out of a desire to share.

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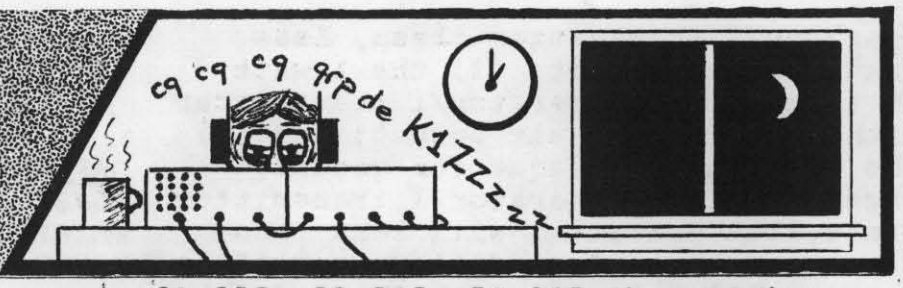
Congratulations to WD4FXX, who won the QSL design contest! Details on how to get samples and how to order are in the secretary-treasurer's column.

QRP CONTESTS



By William W. Dickerson - WA2JOC
QRP ARCI Contest Chairman

In case you haven't noticed yet, there are no contest results listed in this issue. In all of our announcements for the January SSB QSO Party, the date for submitting contest logs was pegged at March 25. Unfortunately, when coming up with that date, we forgot that the copy deadline to the editor is the 10th day of the month prior to month of publication -- in this case, March 10. So the SSB contest results will appear in the July newsletter, along with those of the April QSO Party. In the meantime, if you don't want to wait that long, send me an SASE and I'll return it filled with the results from January's contest.

In the meantime, here are some dates you'll want to keep in mind:

APRIL 1981:

Annual QRP ARCI April QSO Party - runs from 2000 UTC Saturday (4/18/81) to 0200 UTC Monday (4/20/81). Exchange: members - RST/RS, state-province-country (S/P/C), QRP #; non-members - RST/RS, power OUTPUT. Scoring: stations can be worked once per band regardless of mode for QSO and multiplier credits. Each member QSO counts 3 points. Non-member QSOs count 2 points. Stations other than W/VE count 4 points. Bonus points: +500 points for 100% solar or wind power to run station, +200 points for 100% battery power to run station for duration of contest. Power multipliers:(input)

More than 100 watts	.....X1
30-100w	.....X1.5
10-30w	.....X2
3-10w	.....X4
1-3w	.....X6
Less than 1w	.....X10

Scoring: QSO pts. x total S/P/C on all bands x pwr multiplier = subtotal + bonus pts (if any) = total claimed points. Frequencies: CW - 1.81, 3.56, 7.04, 14.06, 21.06, 28.06, 50.36 Mhz. SSB - 1.81, 3.985, 7.285, 14.285 21.385, 28.885, 50.385 Mhz. Novice frequencies: 3.71, 7.11, 21.11, 28.11 Mhz. All frequencies + or - 5 Khz to clear QRM. Try SSB on even hours, Novice frequencies on the half hour. All VHF/UHF QSOs must be direct - repeater QSOs do not qualify. Calling method: CQ CQ CQ QRP de Call Sign K. Certificates: one to the highest scoring station in each S/P/C with more than 2 entries. Other places will be given depending on activity in each S/P/C. One certificate to highest scoring Novice/Technician. One certificate to station showing 3 "skip" contacts using lowest power. Logs: Send full log data, including name, address, bands used, plus equipment, antennas, power used, and details on any bonus points claimed and how they were determined. Indicate your license classification (Novice, Technician, etc.). Entrants desiring result sheets and scores should send SASE using #10 envelope and sufficient postage. Entry into the contest constitutes an agreement by the entrant that the decision of the contest chairman is final in case of dispute. Logs must be received by May 20, 1981 to qualify. Logs received after that deadline will be used as check logs, as will those with missing information. Send all logs and data to the contest chairman (address on Page 2).

April 25-26: Italian QRP Club SSB Field Day.

May 1: AGCW-DL QRP's QRP QSO Party.

May 30-31: CQ Magazine's CW WPX Contest with QRP division.

June 27-28: ARRL Field Day and Milliwatt Field Day Trophy: With the tremendous increase in QRP activity, the two US QRP organizations (QRP: under 5 watts output), The Michigan QRP Club and the QRP Amateur Radio Club International have added their support to the Milliwatt program by sponsoring two new categories and an expanded awards program. Participants in the ARRL FD can now compete in three categories: (1) The Milliwatt FD Trophy for 2

operator/1 transmitter class, less than 5 watts output; (2) the 1 watt FD trophy for 2 operator/1 transmitter with less than 1 watt output; and (3) the QRP Club FD Plaque for groups exceeding the 2 operator/1 transmitter limit, but operating with less than 5 watts output. In addition, certificates will be awarded to the 2nd-4th places in each category, provided there are a minimum of 10 entries in each category. Scoring: QSOs x pwr multiplier (5 w=X4, 1w=X8) x 1.5 (if running on emergency power) + 150 (for fully portable installation). Entry: duplicate of ARRL FD entry or reasonable facsimile (summary sheet showing breakdown of QSOs by band, power used, type of power source, whether full portable or Class 1E, checklist of stations by band or copy of log). Entries due by Aug. 31,1981. Send to: Ade Weiss, WØRSP, 83 Suburban Estates, Vermillion, SD 57069. You can get results direct with SASE or see QRP ARCI or MI QRP C newsletters or QRP column in CQ magazine.

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QRP ARCI monthly informal QSO party band plan (QSO parties held on the first Sunday of each month):

All times UTC

80M 0100-0300
40M 1500-1600, 1900-2000, 2300-2400
20M 1600-1700, 2000-2100, 2400-0100
15M 1700-1800, 2100-2200
10M 1800-1900, 2200-2300

An "on-the-air" membership drive will be conducted EACH Sunday in April and October, using the above band plan. The station leading in new members signed will be acknowledged in the Quarterly and designated by the club's secretary-treasurer. Membership applications are available from the club secretary-treasurer, or can be photocopied from the sample at the end of this issue.

OTHER DOINGS:

The QRP ARCI's banner will be "flown" at the following activities:

Dayton Hamvention: see the president's column on Page 1 for details.
Monroe Swap, Monroe, MI: June 14. QRP table with K8IF and WA2JOC, and a QRP forum.

Send upcoming swap meet, hamfest, forum information (where QRP ARCI will be represented) to William Dickerson. See Page 2 for address.

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CLUB AWARD UPDATE

By Hugh Aeiker - WA8CNN
QRP ARCI Awards Chairman

QRP ARCI Honor Roll:
K6JSS - Harry Blomquist
WA2HYY - Paul Smolarz
K4WVX - Jim Perry
K3YNN - Elmer Worth
W5JLY - Earl Lawler
W6CIS - Ken Hughes
W7OE - Howard Pyle
WØGWT - Bob Henrich
WA8WGJ - Alan Cunningham
WA8RJF - Tony Emanuele
K7ZVA - Bob Jenks
KAY - Mrs. Jenks
ZL1BKL - Marion Lister
K7LNS - Fred Behrman
W8JKB - Joseph Szempias
WA8CNN - Hugh Aeiker
KAØO - Bob Ligget

KM/W - CW:
WD5HYD to VK7NRT,3w,2.966 KM/W, 21
WDØEPV to F9OB, 2w, 1.95 KM/W, 21
KAØFDL to PY1BCF, 5w, 1.05 KM/W, 21
WA1YLN to VK4LG, 2.5w, 3.84 KM/W, 21
WA9FWO to VK3MR, 8w, 1.088 KM/W, 21
WB4RRA to VK5CU, 4w, 2.621 KM/W, 14
WB3KOZ to DK5EZ, 3w, 1.3 KM/W, 7

KM/W - SSB:
N7ARE to VK4AOK, 5w, 1.5 KM/W, 28
WB7UNJ to JA2IJV, 3w, 1.933 KM/W, 29
WD5ITK to GM4GNR, 3w, 1.466 KM/W, 28

QRP WAC:
KA1CZF, 5w, Novice #2
WA1YLN, 3w, CW

QRPp WAS:
N2AXY, 40-state seal
WA1YLN, 3w, CW, 50 states

DXCC QRPp:
WA1YLN, 3w, CW, #11

QRP 25:
WB4RRA, basic award and 50 seal

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HEAVY TRAFFIC: net news

By Red Reynolds - K5VOL

This past quarter there has been a lot of activity on our nets, and a lot more has been planned. First, a rundown on the existing nets shows the 20 meter net to be very popular with a lot of participants. We already have two 20 QNI certificates issued! 40 meters continues its usual good activity with a good group of NCSs. 80 meters is now approaching the summer QRN period, and it will move to 7040 KHz when the country plays musical clocks at the end of April.

As for the new: We have sectionalized our nets for more activity from those who couldn't make the "national" nets. These nets, each with its own net manager, are starting up now or very soon, and will be announced on the air on other nets as well as in this column. The old 40 and 80 meter nets are now known as the Great Lakes Net (GLN), and the 20 meter net has become the Transcontinental Net (TCN). The full breakdown is as follows:

Northeast Net (NEN) - Net Manager is Doug Crittendon, WB1ESN. The net meets each Saturday at 1300 UTC on 7.040 MHz. It encompasses MD, DE, NJ, PA, NY, CT, RI, MA, NH, VT, ME, and VEs 1 and 2.

Southwest Net (SWN) - Net Manager is James Holmes, W6RCP. The net meets each Friday at 0300 UTC on 7.040 MHz. It encompasses CA, HI, NV, UT, CO, NM, and AZ.

Southeast Net (SEN) - The Net Managers are Edwin Lappi, WD4LOO, and Gerald Beam, WA9WZV/4. The net meets each Saturday at 1400 UTC on 7.040 MHz. It encompasses VA, TN, NC, AL, GA, SC, FL, and the US possessions in the Caribbean.

Great Lakes Net (GLN) - Net Manager is Robert "Red" Reynolds, K5VOL. The net meets each Thursday at 0200 UTC on 3.56 MHz, but will move to 7.040 MHz during the summer beginning April 29. It encompasses WI, IL, IN, OH, MI, KY, WV, and VE3.

Great Lakes Net (GLN) - Net Manager is Lester Flake, K8KIR. The net meets each Saturday at 1500 UTC on 7.040 MHz. It encompasses the same territory as the 80 meter GLN.

Transcontinental Net (TCN) - Net Manager is Tom Davis, K8IF. The net meets each Monday at 0001 UTC on 14.06 MHz. Anyone that can make it is in on this one.

Transcontinental Net (TCN) - Net manager is Jerry Felts, WA5TFU/Ø. The net meets each Sunday at 2000 UTC on 21.385 MHz (SSB), beginning April 5. Again, whoever can make it is welcome!

Gulf States Net (GSN) - Net Manager is Edmund Popp, K5BOT. Date, time, and frequency are to be announced. Check that...this just in...the net will meet each Wednesday at 2100 UTC on 3.560 MHz, beginning April 15. It encompasses TX, OK, AR, LA, and MS.

And nets are being formed for other regions as well, so stay tuned!

New net certificate winners are K3TKS (issued 1/5/81, #12, 80M), WA9WZV/9 (issued 3/23/81, #1, 20M), and K8IF (issued 3/23/81, #2, 20M).

Also, if you can make it, try checking in to the Michigan QRP Club nets:

Tuesdays, 3.535 MHz, 9 pm local (MI) time, and on Sundays, 7.27 MHz, 8:30 am local (MI) time. The latter is an SSB net.

A couple of other points on our new section nets: cross-section check-ins are most welcome. Any Novice nets that get underway will add "N" to the section designation (NENN = Northeast Novice Net. SSB nets will add "S" to their section designation (GLSN = Great Lakes Sideband Net). And the call-ups will include "QRP" before the section designation (CQ QRP GLN, CQ QRP NENN, etc.)

Let's all support our "friendly, local net" and its hardworking NCS!

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FROM THE SECRETARY'S BLOTTER

By Edwin Lappi - WD4LOO
QRP ARCI Secretary-Treasurer

Pete Spotts, N1ABS, was recently elected by the membership to a position on the Board of Directors. The participation by you, the members, was outstanding. We even received ballots from Japan and Australia. The only regretable factor was that out of a total of 120 ballots, eight were received after the deadline and couldn't be counted. Please pay close attention to the ballot deadlines, especially with our upcoming elections.

Two officers, Hugh Aeiker, WA8CNM, and Fielding Behrman, K7LNS resigned their positions--awards manager and publicity officer respectively. We thank them deeply for the service they have rendered the club. The board elected their replacements to fill the unexpired terms and to stand, if they wish, for reelection by the board after July's board elections. The new awards chairman is Doug Crittendon, WB1ESN. And the new publicity officer is Fred Bonavita, W5QJM.

Now for more on those elections I just mentioned. Four current board members and all club officers' terms expire Jan. 1, 1982. Thus I am request-

ing nominations for four positions on the board of directors, and for each of the officers (see list on Page 2 for list of officers and offices). As you will see in the bylaws at the end of this issue, the membership elects the board, and the board elects the officers. Please send me your nominations so that they arrive here no later than May 15, 1981. The ballot for board election will appear in the July issue. Your timely response to this request is imperative. Please enclose a short profile of all candidates you nominate. These should include a statement as to why the person is running and what he or she would like to contribute to the club. The following board members are running for re-election (3 of the four seats): K5VOL, WA2JOC, WA2HYY. As for the officers, all have indicated a desire to run for re-election except K7ZVA, Robert Jenks, the club vice president.

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Items available from the club:

- From the Secretary-Treasurer:
  (1) Club bylaws - send #10 envelope SASE for 1 oz.
  (2) Club history - 1961-71 $1.00, #10 SASE 2 oz.
  Supplement I - 1971-74 $0.50, #10 SASE 2 oz.
  Supplement II - 1974-75 $0.50, #10 SASE 2 oz.
  Supplement III - 1975-77 $0.50, #10 SASE 2 oz.
  (3) Membership applications, 16 for $1.00
  (4) Latest membership roster, $0.50, #10 SASE 2 oz.
- From the editor of the QRP Quarterly:
  We have a limited amount of back issues, which will be available for $2.00 each; if the back issue must be photocopied from the editor's file copy, it will run $2.50 to cover photocopying cost and postage.
- Of general interest:
  (1) QRP ARCI name/call badges-these sharp-looking badges are 2"x3", black lettering on white background, and include your first or last name, call, and the new club logo. Price: $4.00 each. Please include you return address with each order. Badges can be ordered through Tom Davis, K8IF, or direct from George Collier, WØEG, 1816 Third Ave., S. Anoka, MN 55303
  (2) New QRP ARCI personalized QSL cards, which incorporate your call, QRP ARCI number, and the QRP ARCI logo. For a photocopy sample and ordering information, send SASE to Tom Davis, K8IF. (See page 2, officers roster)

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QRP ARCI'S BARGAIN BASEMENT

For sale: Kenwood TS120S, very clean, with CW filter and hand mike - $575. MFJ Versatuner 2 (Model MFJ-945) - $45. Home built accukeyer with memory - $35. de Paul Deathos, KA8KDE 1919 Brookwood, Royal Oak, MI 48073 (313) 543-1278

For sale: Ten Tec Century 21 w/CW filter. Replaced momentary pushbutton offset switch with SPST toggle-type switch. Power output about 60% of what it should be at 70 watts input. Otherwise, it's in great shape - $125. Swan Model ST-3 transmatch w/built-in SWR and output meters (lighted). Good for coax, random wire, twin lead feed lines (switch on front panel). Excellent condition - $60. MFJ Versatuner 2 transmatch (model 941) - $45. de Pete Spotts, N1ABS 140 Warren St., Needham, MA 02192 (617) 444-1873 (evenings).

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10 COMMANDMENTS OF ELECTRONICS

From Bulletin of the
British Columbia
FM Communications Assoc.
via Amateur Radio News Service

(1) Beware of the lightning that lurketh in an undischarged capacitor, lest it cause thee to be bounced upon thy buttocks in a most ungentlemanly manner.
(2) Cause thou the switch that supplies large quantities of juice to be opened and thusly tagged so that thy days may be long...
(3) Prove to thyself that all circuits that radiateth and upon which thou workest art grounded, lest they lift theeto high-frequency potential and causeth thee to radiate too.
(4) Take care that thou useth the proper method when thou takest the measure of high voltage circuits so that thou doest not incinerate both thee and thy meter; for verily I say unto thee, though thou hast no account number and can easily be replaced, the meter hath one and, as a consequence, bringeth

much woe unto the purchasing department.
(5) Tarry thou not amongst those who engage in intentional shocks, for they are surely non-believers and are not long for this world.
(6) Take care that thou tampereth not with interlocks and safety devices, for this, if thou doest it, shall bring the wrath of thy seniors and the furry of the safety officer down about thy head and shoulders.
(7) Work thou not on energized equipment, for if thou doest, thy buddies shalt surely recompense thy widow with beers, consoling her in ways not generally acceptable unto thee.
(8) Verily, verily I say unto thee, never service high voltage equipment alone, for electric cooking is a slothful process; thou mightest sizzle in thine own fat for hours on end before thy Maker sees fit to drag thee unto His fold.
(9) Trifle not with radioactive tubes and substances, lest thou commence to glow in the dark like a lightning bug, and thy wife be frustrated nightly and have no further use for thee and thy wages.
(10) Commit to memory the words of the prophets, which are written in the instruction books; they giveth thee the straight dope, yea, they consoleth thee. Follow them and thou cannot make mistakes, sometimes, maybe.

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FROM THE MAILBAG

Fellas,

I'm a new member of the QRP ARCI and just received my first QRP Quarterly. The editorial comments by the club president leave me at a loss as to the purpose of the club. The new rules on Page 3 refer to the club as "unique" and the new rules being implemented to "weed out part-time QRPers". On the other hand, the editor promotes (Page 14) welcoming part-timers.

I recently joined as an associate member, only because of the power limits. I've been a ham for 11 years and have operated QRP sporadically over that time. Just recently I have challenged myself to build my own equipment, which seems to inherently introduce one to serious low-power operating. After building three little transmitters, I have found a lot of pleasure in using them, not because they were QRP, but because they were "mine". The contacts I was making (low power winner in Oct. QSO Party) gave me confidence and brought forth ego-inflating complements and amazement from those I was working.

But this IS NOT the entire scope of my amateur radio hobby. I've always been an active DXer and have 293 countries worked/286 confirmed. I am only 30 contacts away from five-band DXCC. I have no intention of giving up this challenging aspect of my hobby, but I'm aware of my limitations with QRP. Do understand that I'm not one of those 2 kw+ boys you hear on 14.205 every night. But I often run a kw to snare an "elusive" one. I'd be tickled pink to make Honor Roll DXCC or 5BDXCC with QRP, but I have neither the time nor resources (antenna space and $$) to invest in my hobby to obtain such a high goal. (You can bet I'm keeping a list of DXCC/QRP contacts just the same!)

Should this approach to my hobby deny me the privilege of being a QRP ARCI member? Would occasional CW operating bar me from an SSTV or FM repeater group? I certainly hope not. One attitude I see in the QRP ARCI is a lack of recognition/respect for the other hams on the band, almost as if there was a malicious intent to degrade amateur radio by running more than five watts. The majority of guys I work (by far) are not QRPers. In fact, with the exception of the QSO Party, I have never knowingly worked another club member. In many instances, the band would not allow a 2x QRP QSO because of band conditions. So if it weren't for the QRO boys, I might as well turn off the rig and watch TV! These are the comrades we can impress with low power operating, and they should be welcomed to the club and its activities.

In other words, there should be no fear of outsiders (QRO) undermining the integrity of the QRP organization. If they don't find QRP interesting, then they will go away, but a bit more informed and hopefully with admiration for those who accept the challenge full-time. The impact of QRP is best displayed when spread across the band, not when kept on a "private" frequency with other members of the clique.

So allow some form of membership to ALL amateurs. In order to maintain the ranks, it is unfair and unwise to exclude prospective members. I, along with

other associate members, intend to be an active member of the club and will contribute as well as benefit with the group whenever possible. This is why people join! So please don't consider me deadweight to your organization or just another number. Give me and others the opportunity of being members in good standing, without forcing us to cast aside the other facets of amateur radio.

Bill Meacham
WB4SXX

Correction:

In the January issue, a letter from Takahisa Masuzawa, JH1HTK, mentioned a 'Round-the-Earth-per-watt award. In describing the distances, the breakdown should have read 40,000 Kilometers/watt for full way, 20,000 KM/watt for half way, and 10,000 KM/watt for quarter way achievements. The Quarterly regrets the error.

Dear OM,

I've recently updated my regular rig (80-100 watts out) and in the process found it necessary to turn a lot of my older rigs and materials into cash (I'm retired-'nuff sed). Well, now I'm in the position of being unable to operate QRP until I gather a few more bucks.

Sure would be helpful if some of the technical types would evaluate some of the QRP rigs that are available (old and new), i.e., what's good, not so good, and maybe some modifications.

Also, why not allow members to advertise in the Quarterly? Some clubs have it for free-but could be a reasonable charge. What say?

John Hamilton
WB9OEQ

Pete,

Been running QRP with Ten Tec Argonaut for three years now exclusively. Working all over the world. If I hear a signal, they usually hear me. Getting an average of only 1 db less signal report back. Using a Cushcraft HTB 34 at 50 feet on 10-15-20 and a 160 meter dipole on 40 and 80. I get a thrill every time I go on the air with QRP, especially when I break into a QSO on 20 meters and you should hear the comments from those frequency hogs running higher power, hogging the band. "We have to run this power to reserve our right to the frequency" is the most regular one. If they only knew how selfish and self-righteous that sounds! There really would be room for three times as many QSOs on the band if they would drop their power and check their drift. Well, I think the (legal) power limit should be dropped to 100 watts. I can see no logical reason for any more. It is the same reason I am against putting a 470 cu. in. engine in an auto. Well, so much for that. Thank you guys for the QRP club. Keep up the good work.

Don Mahre
K7IAW

Dear Pete,

A note from an often frustrated (read QRP) operator...

It is the first Sunday in March, and a beautiful, sunny day here in the Washington D.C. suburbs. If I wasn't so stubborn, I'd be out taking a nice walk. But today is not only QRP QSO Party day, but also part of a G-QRP activity weekend in Great Britain. Since I'm infected with the QRP bug, you find me at the operating position.

I've been tuning 15 and 20 meters since 1500 UTC and have worked two fellow club members, so far. It's now 1710 UTC and the rig is tuned to a very quiet 21.060. I can lean back in my armchair and still operate the keyer paddle while I relax. So I gaze out the window and daydream of where my QRP signals will be heard, if they are heard, as my wrist coaxes a long string of CQs. My TS-130V, at half power, dutifully puts 5 watts to the indoor dipole.

Then, signals a QRO operator probably would ignore...WA3SEE de G3YNA QRP...very weak, but stable. I'm brought back to reality by the wonderful thought that I'm being heard in England. The band is very quiet, and I am happy to exchange 3-3-9 reports with Alan in Hastings and complete a FB QSO with another QRP op.

I've been QRP exclusively for less that a year. And I've been discouraged at times when I couldn't get stations to answer my call. But either I'm geting used to it, or I'm getting better, because lately there are more QSOs in the log.

At any rate, I'm writing to encourage any other frustrated QRPers to hang in there. Borrow an idea from Zen philosophy. If something is frustrating, try it for one hour, then two, then 3!

Carl Olson - WA3SEE

PREAMBLE:

The QRP Amateur Radio Club International, Inc. is a non-profit organization of radio amateurs dedicated to increasing the world-wide enjoyment of the hobby by the voluntary limitation of transmitted power used for routine contacts and by the promotion and support of achieving extensive QRP activity and operations. These By-Laws represent the policies and principles by means of which the goals of the club are attained. The Club depends on the individual Honor System to insure functioning in the original spirit on which the Club was founded. Membership is not financially or legally binding; resignation may be made by a member at any time in writing. The Club does not construe or intend the membership maximum output power voluntary requirement as defined in Article I(a) to be a definition of contemporary QRP power, but rather, considers this membership requirement (Article I(a)) as a universal benefit for all amateurs world-wide. The Club does consider contemporary QRP operation to be one-tenth of the maximum output power permitted the membership and is defined in Article I(b).

Article I: Power Limitations

(a) Members agree to limit power output to a maximum of 50 watts (100W PEP SSB) except when engaged in public service activities such as emergency communications (RACES, ARES etc.), MARS, organized third party traffic (NTS, TCC, & local TN's) or in special status amateur bands such as are applicable to Phase III Satellite operations etc., when increased power is permitted to achieve effective communications. Exceeding the power limits while engaged in normal routine operations is cause for disqualification and forfeiture of membership. Members must comply with all the rules and regulations of the official liscensing authority of their country.

(b) QRP operation is limited to a maximum transmitted power not to exceed five (5) watts output. This QRP limitation is reflected in the award program.

(c) The Club acknowledges, as an equitable average factor, the multiplier of two (2) when applied to the club maximum output powers as defined in Article I(a) and (b) to develope comparable input power designations; however, by definition the Club maximum power limitations are based only on output power measurements.

Article II: Membership Status

(a) Membership is for the life of the member unless cancelled by reason of exceeding the Club ouput power limits, voluntary resignation, or loss of membership for sundry reason such as for failing to answer official Club inquiries within a reasonable period of time.

(b) A member may be active or inactive. An active member is one who participates whenever possible in club functions, meetings, contests and various other activities and who pays fees on a current basis for the Club's Quarterly Newsletter after the expiration of the first full membership year. A member not in compliance with these stipulations is classified as inactive.

(c) The Club issues only one grade of membership as defined in Article I(a). The Club acknowledges the continuing membership of certain former Associate members who hold all club priviledges except the right to vote. New of additional associate membership status is not available.

Article III: Club Officials

(a) Officer positions consist of a President, a Vice-President, a Secretary-Treasurer, Editor, Awards Bureau Manager, a Legal Officer, a Publicity Officer and a Contest Manager. The Board of Directors shall consist of at least six (6) but not more than fifteen(15) members.

(b) Members of the Board of Directors shall be elected to serve for 3 years. All other Officers shall serve for 2 years. All terms of office shall begin with the first day of January of the applicable calendar year.
(c) If required for the proper operation of the Club the Board of Directors may create additional Officer positions whose authority shall not exceed that of the Officers designated in Article III(a).
(d) The Board of Directors may combine club offices (as for example Editor and Publicity Officer) if it appears to the Board of Directors that the best interest of the club will be served. Such actions shall be initiated by the Officials concerned and shall be approved by a two-thirds (2/3rd) majority vote of the Board of Directors.

Article IV: Meetings, Elections, Appointments

(a) An annual meeting of the active members shall be held at 10:00 A.M. on the last Monday of August in each year. The purpose of the meeting shall be to elect Board of Director members and complete such other business as may be brought before the meeting. Notice of the meeting and an agenda shall be printed in the Club Newsletter for the July-August-September quarter and not less than twenty (20) days prior to the meeting. Upon due notice the Director may call additional meetings of the active membership if and as required. In lieu of attendance at the meetings each active member may cast the vote by proxy which will be provided for the active members use in the Club Newsletter to be issued during the third quarter of each year.
(b) Directors shall be elected by the active membership. One-third (1/3rd) of the directors shall be elected in each calendar year. Prior to the election, the President shall appoint a nominating committee to be charged with the nomination of candidates for membership on the Board of Directors. The names of such nominees shall be printed in the Club Newsletter not less than twenty (20) days prior to the annual meeting. A ballot for the use of each active member to record the vote will be provided.
(c) Officers of the Club shall be determined by a two-third (2/3rd) majority vote of the Board of Directors.
(d) If a vacancy occurs in either the Board of Directors or another Office by reason of resignation, removal or other valid cause, it shall be filled by a two-third (2/3rd) majority vote of the remaining Directors if a Board vacancy (or if an Officer vacancy, by the Directors) for the unexpired term of the office so vacated.
(e) Only active members as defined by Article I(a) and Article II(b) shall be eligible to vote or to hold office or to hold office on the Board of Directors. For the purpose of determining eligibility of a member to vote or to hold office or to hold office on the Board of Directors the membership records shall be closed ten (10) days prior to any meeting at which a vote might be taken.

Article V: Duties of Officials

(a) President: Shall serve as Chairman of the Board of Directors without Board voting privileges, except in event of a tie vote the President may cast the deciding vote. The President shall appoint all special committees as required and shall act as Chairman of all such committees, or delegate a committee member to act in that capacity. The President shall conduct the office in every way to promote the best interests of the Club toward retaining and expanding Club membership. The President's services shall be available to all Club Officials in an advisory capacity and he shall be available for direct contact to members by way of radio, mail or in person if warrented. The office shall be directly responsible for the maintenance and compliance of all Club policies and principles, coordinating all activity with the Board of Directors.

(b) Vice-President: Shall assume the office and duties of the President in the event the President is unable to discharge the duties of the office or for other valid cause. The Vice-President shall act as Chairman of committees designated by the President whenever the President is unable to function in that capacity and has not delegated other alternates.

(c) Secretary-Treasurer: Shall be the keeper of the official Club seal, will receive and process all applications for membership including the issuance of a Certificate of Membership and the assignment of an official membership number. This Officer shall reply to all Club correspondence of a general nature directed to this office and shall maintain Club records. Maintain the receipt and tabulation of all ballots when required. Submit a quarterly report to the Board of Directors outlining the activities of the office during the preceeding three months including membership and similar pertinent information which shall keep the Board informed.

(d) Publicity Officer: Shall handle general correspondence from the membership pertaining to the office and shall assist the Secretary-Treasurer in promotional activities beneficial to the Club. Shall co-ordinate contest publicity with the Contest Manager.

(e) Editor: Shall be responsible for the production and distribution of the Club Quarterly Newsletter.

(f) Legal Officer: Shall act as Club representative fulfilling the requirement of the Club incorporation in the State of Tennessee.

(g) Awards Bureau Manager: Shall represent the Club in evaluating and processing all applications for Club awards and issue the same when qualified; shall furnish the Secretary-Treasurer with a monthly report for cash received and disbursed in connection with the awards program.

(h) Contest Manager: Shall be responsible for the administration and maintenance of Club sponsored contests and for the timely compilation and reporting of contest scores. The Contest Manager shall co-ordinate contest publicity and membership notification of pending contests with the Publicity Officer and the Editor as required.

(i) Board of Directors: Shall elect Club Officers and conduct an annual meeting and other such meetings as required by Article IV. During the period between meetings of the Club, the Directors shall establish policies and programs for the Club which policies and programs compliment the best interest of the Club. In all matters of concern or disputes the Board of Directors shall be the final authority.

Article VI: Removal of Club Officers

Any Officer or official of the Club may be removed from office for cause by a two-third (2/3rd) majority vote of the Board of Directors.

Article VII: Membership Entrance Fee

An "Entrance Fee" for new members, payable upon submission of a membership application, shall be established at a charge to be decided by a majority vote of the Board of Directors. The Board of Directors may make any change in such fee as economic conditions so warrent. The entry fee shall cover life membership, subject to the conditions outlined in Article II(a) and no other fees or assessments against a member shall be made. Each new member shall receive for the entrance fee a life membership certificate and the next four (4) issues of the quarterly Newsletter free of additional charge. Beginning the second year of membership, and in all subsequent years, members shall be charged a modest sum to cover publication costs of the quarterly Newsletter. This charge shall be determined by majority vote of the Board of Directors. An active member must comply with the requirements of Article II(b).

Article VIII: Club Newsletter

A Club Newsletter shall be published and distributed in the months of January, April, July and October of each year to all paid up active members enjoying their second or more year of membership. (Note: First year members please refer to Article II(b) and Article VII). Publication of the Newsletter shall be the responsibility of the Editor who shall make suitable arrangements for its distribution. Material contained in the Newsletter shall consist of general news of the Club being both national and international in nature. Outstanding accomplishments of individual members shall be recognized therein. Member news items of schematic diagrams and news on novel QRP circuits and equipment, construction hints and tips and similar items of interest to the general membership shall be included. A short paragraph not to exceed one page shall be carried in each issue and appropriately titled to include the source as "From the President". It shall be the responsibility of the President to furnish the copy for this item which should cover presidential comment with respect to the conduct and progress of the club in general an similar information.

Article IX: Geographical Distinctions

Two distinct geographical groupings of the Club membership shall be recognized and known as the "Domestic Region" and the "International Region". The Domestic Region shall include the fifty (50) states of the United States of America. The International Region shall be the remainder of the World. Regions may be, at the discretion of the Board of Directors, divided into "Areas" of smaller geographic boundaries. Where Areas have been established, the Secretary-Treasurer, with the approval of the President, shall appoint "Area Representatives" (or Managers) with duties to be determined as requirements dictate at the time of the appointments. Regions shall be administered by the Board of Directors, in cooperation with the President and Secretary-Treasurer, who shall act as an International Board of Directors and who shall represent the ruling body in connection with affairs of the International Region.

Article X: Revision of the By-Laws

These By-Laws for the guidance and operation of the Club may be amended, revised, added to or diminshed by a majority vote of the Board of Directors.

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QRP AMATEUR RADIO CLUB INTERNATIONAL INC.

APPLICATION FOR MEMBERSHIP

OFFICE USE

QRP #
INQ REC
APL REC
MCERT SENT
LIST FILE
REP CPY

CALL HANDLE

FULL NAME

ADDRESS

CITY/ZONE/STATE

AGE OCCUPATION RECOMMENDED BY

CLASS OF LICENSE HELD SINCE OTHER CALLS (Except Novice)

RIG: TX ANT. RCVR MAX PWR OUTPUT

BANDS MOST USED 160 80 40 20 15 10 6 2 VHF/UHF
(Number in order of use)

CHIEF INTERESTS RAG CHEW DXING CONTESTS TRAFFIC AWARD VHF
(Circle) EXPERIMENTING PHONE CW SSB RITTY TV OTHER

Answer the following with a YES or NO. If explanation required, use back.

Do you plan to participate in club activities?	Yes	No	Perhaps
Would you like to be an officer/director of club?	Yes	No	Perhaps
Do you have access to duplication equipment?	Yes	No	
Are you interested in our award program?	Yes	No	
Have you applied for any of the club awards?	Yes	No	
Would you help write articles for our quarterly news?	Yes	No	Perhaps
Do you plan to run more than 50 Watts Output?	Yes	No	Perhaps
Have you ever run QRO in past with present call?	Yes	No	
(When (Mo. & Yr.) from to			

The following questions may be answered if desired. Use back of sheet.

A. Why do you run low power?
B. What achievements, awards, etc. have you won as a QRP Amateur?
C. What subjects could you write about for our newsletter?
D. Are you in favor of specific calling Freqs and QSO parties for member get-togethers?

I _____ now run 50 watts or less power Out. CW/100 watts SSB P.E.P. and make application for membership in the QRP A.R.C. I do not exceed this power in normal operation, emergency and public service activities excepted. I will notify the club secretary immediately if I should increase my power beyond the limits established by the law.

Return with remittance to:
Edwin R. Lappi - WD4LOO
203 Lynn Drive
Carrboro, N.C. 27510

Signed _____

Date _____

QRP Quarterly
Peter Spotts - N1ABS
140 Warren St.
Needham, MA 02192