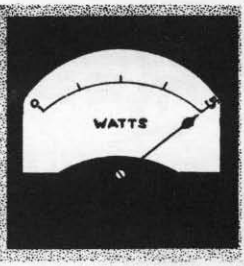
QRP QUARTERLY



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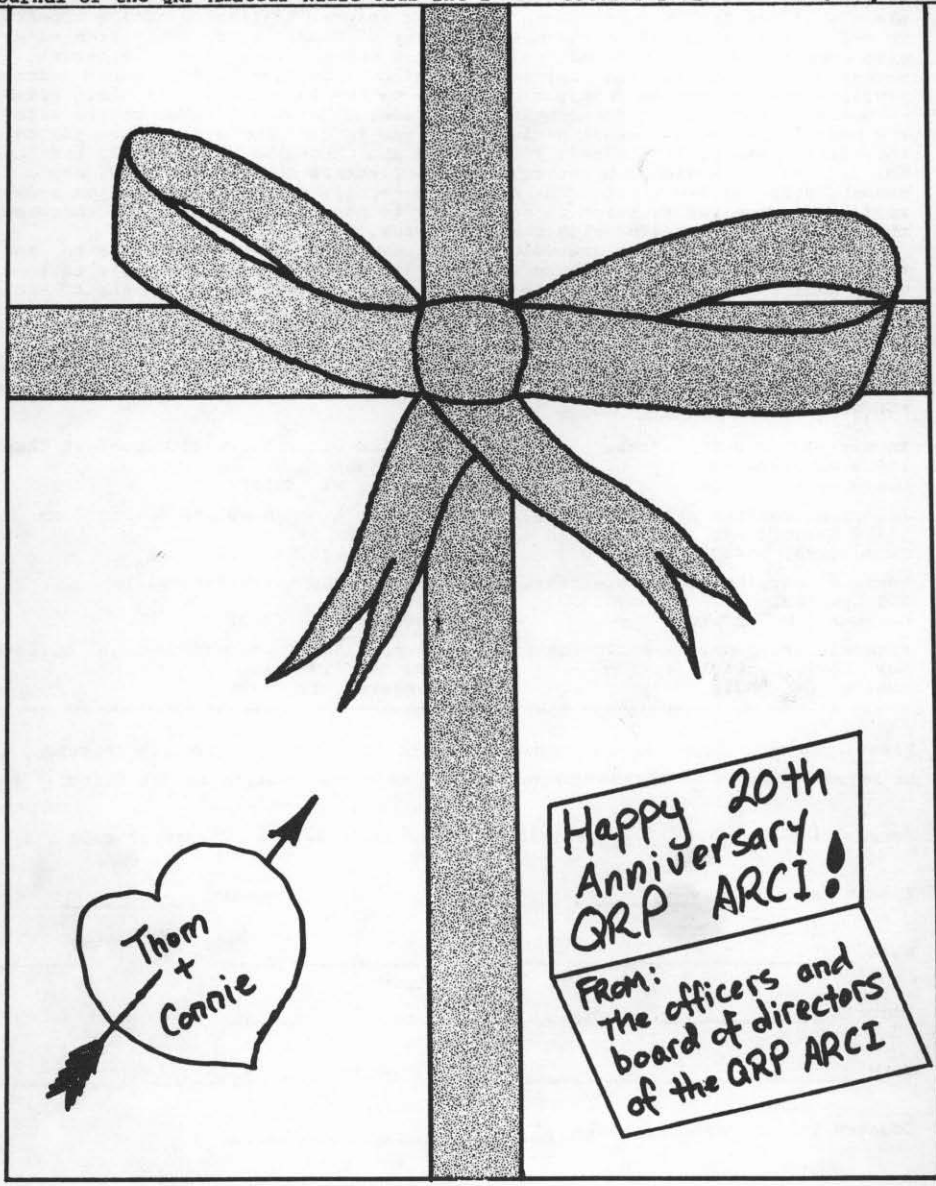

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Letters to the editor are welcome. Not every letter can be published, and the editor reserves the right to edit letters to conform to space limitations. Those desiring a reponse from the editor, officers, and directors should enclose an SASE with their 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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THE PRESIDENT'S FORUM

By Thom Davis - K8IF
QRP ARCI President

My fellow club members. What would the QRP Quarterly be without a column from yours truly? QRP-less unmistakably! Well, rest secure my forum will be QRP, if not in spirit, at least in form. Let it be known that I, for one, would not want to be labeled "QRP-less". Who would?

Anyway, by the time you read this, I shall be returning from my honeymoon, of all things. I'll be well rested (?) and ready for the club's 20th Anniversary QRP CW Contest.

Besides the expectation of a grand contest, were OF COURSE everyone will participate, there are a few other items of interest.

First, let me draw your attention to the membership survey on the last page of this issue. The main question concerns the future of the 50-watt power level as a membership requirement. This is your chance to provide input to the club's board of directors. Please take a few minutes to answer the questions. Then return the questionnaire, or a reasonable facsimile, to N1ABS by Nov. 15. You'll notice that there are other questions on the survey as well. The additional questions will help convey to the club leadership your ideas on what you would like to see the club accomplish. Please be sure to answer these questions, too.

Anything else? You bet! Now I know that everyone enjoys summer weather and summer fun, not to mention QRP Field Day. But have we got news for you! Put your lawn mowers away and plan to participate in the G-QRP Club activity period on Nov. 8. No, it's not a contest. It's just a friendly get-together with a capital group of fellow QRPers in Europe. Want more? Try the VK QRP contest in November, or the Italian QRP SSB contest in January 1982. And if you're into long-range planning, put a big circle around July 17-18, 1982. That's the International QRP contest sponsored by the DL-AGCW QRP Group and the World QRP Federation. A special "thank you" goes to the DL-AGCW Group and WQF Secretary G8PG, and to many other QRP clubs throughout the world for making this contest possible. Let's demonstrate that QRP really does "span the globe."

Oh yes, there's one more thing. Support your newsletter with your QRP related information, articles, projects, and photos. The Quarterly is only as good as the material Pete has to work with.

Well, like I said, this will be a "QRP" forum. I've gotta run and unpack now, read the mail, set up the rig and dust off the key.

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QRP QUARTERS

This issue's QRP QUARTERS belong to Walt Legan, who writes: At the upper left is a 1 amp power supply with adjustable voltage. The meter is shared to read voltage or current. The transmitter is a homebrew, 1 watt, CW rig for 15 meters. It has a dummy load/operate switch, transmit/receive, spot, and VFO adjustment, along with an output meter. The transmitter feeds directly into a 15 meter dipole. My operating consists of only about 2 hours per month at a casual 10 WPM, so this is all the transmitter I need. The receiver shown is a Heathkit HR-1680, but I am building a homebrew, too. The key is a Radio Shack buck-and-a-half special. Besides headphones and antenna grounding switch, that's the whole station! 73s from KA4KXX!

To appear in QRP QUARTERS, send a clear, black-and-white photo of you and your shack, along with a description of the equipment, to the editor. See page 2 for address.

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THE EDITOR'S SOAPBOX

By Peter N. Spotts - N1ABS
QRP Quarterly Editor

Well, I trust everyone had a good summer! I know I did! By the way, my apologies for the lateness for this issue. Several of the weekends I'd tucked aside to work on this issue dissolved into unexpected visits from relatives and friends, and in one case, illness in the family. Fortunately, all is back on an even keel -- for now!

That said, it's time to hang out the HELP WANTED sign. This is the last issue of the Quarterly for me as editor. Gradually building responsibilities at church, home, and work have given me a clear signal that it's time

(Continued on Page 13)

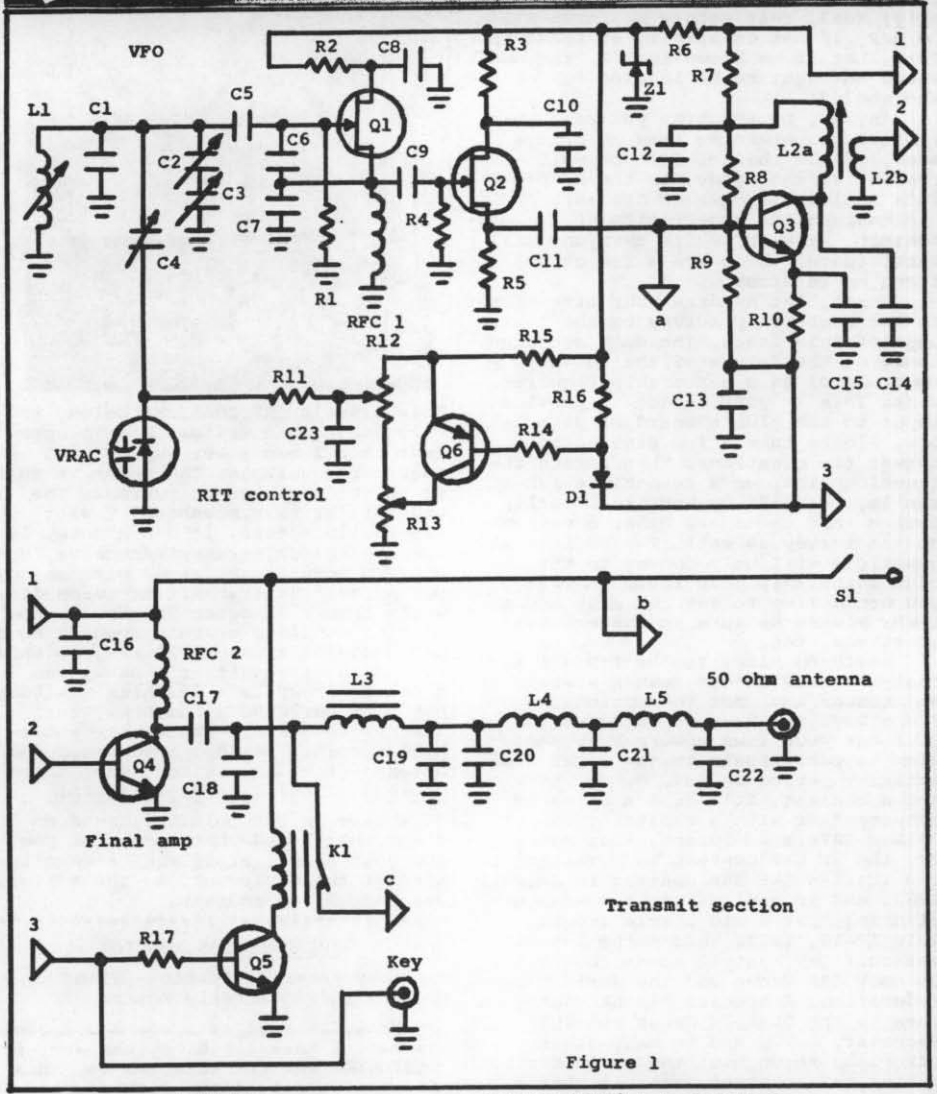


Figure 1

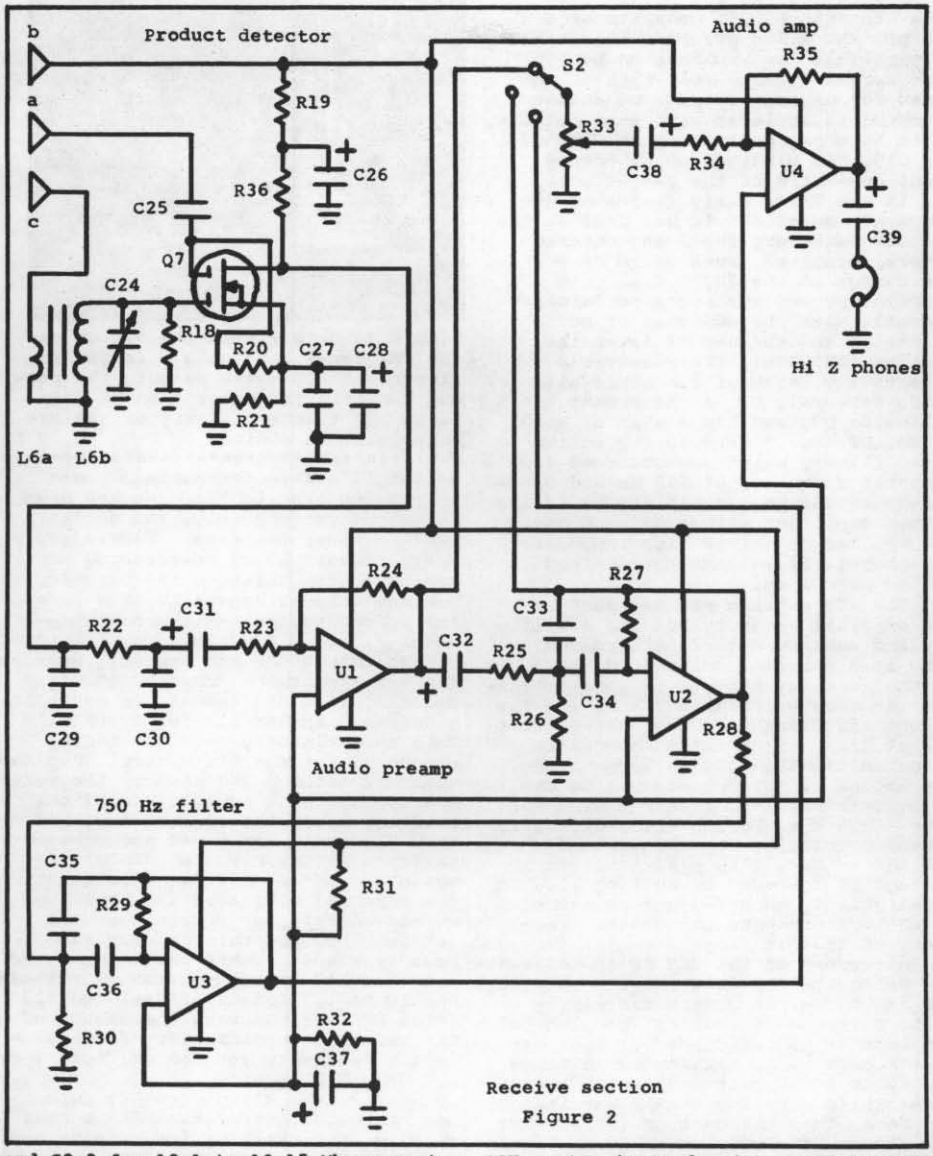
THE TMX

By Thomas Davis - K8IF

The 10 Mhz band looks interesting and promising for 1982. Conveniently placed between 20 and 40 meters, its propagation characteristics are attractive. And the extra operating room with this new band is welcome, too! Its advent gives us a chance to do some experimenting and homebrewing, as well. With that in mind, the TMX (30 meter transceiver) was designed.

The TMX is a VFO-controlled CW transceiver that puts out about 2.5 watts. The receiver section is a direct conversion design with audio filtering and receiver incremental tuning (RIT). Break-in operation also is included.

A JFET VFO similar to the one that appeared in the July issue of the QRP Quarterly lies at the heart of this rig. I merely changed the LC constants at L1



Receive section

Figure 2

and C2,3 for 10.1 to 10.15 Mhz operation. The VFO is always energized, providing injection to the product detector (Q7) and enhancing frequency stability. The VFO output is amplified by Q3 to drive final transistor Q4 to about 2.5 watts output.

Q3 is keyed during transmit. So is Q5, which opens antenna relay K1 and removes the antenna from the product detector input (L6a). K1 is a surplus reed relay (normally-open), which has an adequate switching time for QSK. However, one may wish to use a diode QSK system instead, with a slight sacrifice in receiver sensitivity. The choice is yours. Q4 is an MPSU-31, which was purchased at a local hamfest for about 50¢. The ECG 322 version works just as well, but may cost a little more.

The output of the transmitter section is run through a half wave filter consisting of L4,5 and C20,21,22. The filter provides better than 40 db attenuation of the second and subsequent harmonics (see figure 3, page 6). The values for C20 and C22 were achieved

by paralleling two 150 pf. silvermica capacitors. C21 consists of a 100 pf. and a 500 pf. capacitor wired in parallel. The windings on L4,5 were spread equally over each of the cores for maximum output. Q4 output matching is achieved with a pi network, 36 to 50 ohms, consisting of C18, L3, and C19. The windings on L3 occupy about one-third of the T-50-2 core.

In the TMX's early stages of development, an MC1496 IC was used as the product detector. But I encountered several problems, such as AM detection. The change to the 3N204 dual-gate MOSFET improved the rig's performance overall. With the addition of audio filtering and the use of low-noise Op amps (LM307's), the receiver's sensitivity is about 1.5 microvolts (10db S+N+D/N). U1 is the preamp, following Q7, and has a gain of about 65 db. U2 and U3 make up the active audio filter, which was designed for a center frequency of 750 Hz and bandwidths of 150 Hz and 110 Hz. U4 is the output amplifier with a gain of about 3.8 db, and it drives high impedance headphones. S2 selects the desired filter bandwidth.

The RIT section was not part of the original project. But its simplicity and enhancement of performance make it a welcome addition to TMX. During receive, R12 can be used to offset the receive frequency + or - a few kilohertz. Changes in the control voltage at R12's wiper cause changes in in capacitance in the varactor diode. The amount of this change can be limited by C4's setting. I've set mine for + or - 2.5 Khz. During transmit, D1 is grounded, causing a predetermined voltage at R12. This predetermined voltage is achieved by setting R13. In my alignment, this voltage is set at 4, which represents the center frequency of the RIT range.

Alignment of the TMX is as follows:

Bring the VFO into range by monitoring its output on a receiver, or by using a frequency counter, coupled to the base of Q3 through a 0.1 mfd. capacitor. Set C3 to maximum capacitance and C2 to about half its tuning range. Preset L1's core about half way inside the form. Turn the unit on (DO NOT KEY) and adjust L1 slowly up or down, listening or watching the counter for 10.100 Mhz. Then adjust C3 for minimum capacitance, and check your frequency. If higher than 10.150 Mhz, then reduce C2's capacitance, and repeat. This procedure is repeated until the frequency span is about 50 Khz. This will set the frequency coverage of the TMX.

Next, connect a 50-ohm load to the antenna, along with a power meter capable of measuring about 3 watts. Preset the core of L2 to about half way down the coil form. Remove the frequency counter (if used) and key the rig briefly. While monitoring the output,

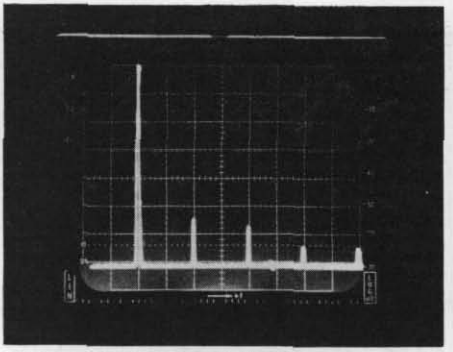


Figure 3: Here's what the output of the TMX looks like on a spectrum analyzer. At 2.8 watts output, the second harmonic is better than 50 db below the fundamental signal, as are subsequent harmonics.

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adjust L2's core for maximum power output. Be sure to keep the key down for short periods only. You don't want to roast the final transistor. Next, "tweak" L3 by compressing or expanding the turns on the core for maximum output. Repeak L2, and repeat the procedure for maximum output -- about 2.5 to 2.8 watts.

To adjust the RIT control, measure the voltage at the junction of R11 and C23, with R12 set at its mechanical center. Adjust R13 for 4 volts. This approximately sets the center frequency for the RIT control. Key the transmit section and measure the voltage again (while keyed). Record the reading, unkey the transmitter, and turn R12 until the keyed and unkeyed voltages match. Key the transmitter again and adjust R13 for 4 volts at the wiper of R12. Mark this setting on the chassis, or record the knob setting, *because this is your zero* beat frequency. Unkey the transmitter and turn R12 to both extremes. Voltages should be 1.7 (minus offset) and 6.5 (plus offset). C4 sets the amount of RIT swing, determining how far + or - center frequency you can go, i.e. + or - 1 Khz, 2 Khz, etc.

Return the RIT control to zero beat frequency, your recorded center setting, for matching the receive and transmit frequency.

The receiver now can be peaked, either with a signal generator or an on-the-air signal. Set S2 to the maximum bandwidth position (bypassing U2 and U3). Disconnect the 50-ohm load and replace it with an antenna or a signal generator set for a 5 to 10 microvolt signal level. Plug in the headphones and set the volume control (R33) to about half its range. Turn the main tuning capacitor to 10.100 Mhz and peak C24 for maximum audio level when receiving the signal generator's output or an on-the-air

signal. Don't fret if you don't have access to a signal generator. I've peaked the rig on RTTY signals at 10.130 Mhz and came very close to the performance of a lab alignment!

Next, check the RIT. Set R12 to center and zero beat a signal. Slowly turn R12 to both extremes. The audio pitch at each extreme should be about the same. If you pass the frequency response of your ears at either end of R12's range, C4 may be set too high, making your offset greater than + or - about 3 Khz. You can narrow the swing by reducing the capacitance of C4. But because this will affect the VFO calibration, L1 also will have to be retuned. C4 could be replaced with a fixed-value capacitor from 3 to 10 pf. The higher the capacitance, the wider the RIT swing.

Finally, check the audio filtering of U2 and U3. Tune a signal at about 1 Khz, with S2 at its first position (widest bandwidth). Turn S2 to the second position. The audio should drop about 4 db. It should drop about 10 db in the third position. The filter bandwidth is 150 Hz (second position) and 110 Hz (third position).

This completes the alignment of the TMX, and now you should be QRV! The entire project was breadboarded, so no printed circuit information is available. But anyone who builds the TMX on a PCB might be willing to let the club know and supply the etching pattern. Also, any modifications would be welcome, i.e. sidetone, diode switching, metering, etc. Send them to N1ABS or me.

Good luck, and hope to see you soon on 30 meters!

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PARTS LIST

C1,5,7,9:270 pf. silver mica (SM)
C2,4:3-30 pf. trimmer
C3:4-40 pf. variable
C6:470 pf. SM
C8,10,12,13,17,27,27,29:0.01 mfd. disc ceramic
C11,15:230 pf. SM
C14:180 pf. SM
C16:0.1 mfd. disc ceramic
C18:1800 pf. SM
C19:1500 pf. SM
C24:80 pf. trimmer
C25:27 pf. SM
C26:20 mfd. electrolytic
C28,39:10 mfd. electrolytic
C30:0.33 mfd. disc ceramic
C31,37:1 mfd. electrolytic
C32,38:2.2 mfd. electrolytic
C33-36:0.0027 mfd. disc ceramic
C23:0.001 mfd. disc ceramic
C20,22:300 pf. SM (see text)
C21:600 pf. SM (see text)
D1:1N914 diode
K1:reed relay, 12v., normally-open
L1:6 turns #26 wire on ½" long, slug-tuned form
L2a: 11t, #26 on ½", slug-tuned form
L2b: 2t, #26, over L2a
L3: 5½ turns, #26, on T-50-2 toroid
L4,5: 12½ turns, #26, on T-50-2 toroid
L6a: 3½ turns, #26, on T-50-2 toroid (over L6b)
L6b: 35½ turns, #26, on T-50-2 toroid
Q1,2: 2N5486 or MPF 102
Q3: 2N222
Q4: MPSU-31 or ECG 322
Q5: 2N3904
Q6: 2N3906
Q7: 40673 or 3N204
R1,4: 47k, ¼ watt
R2,3: 100 ohms, ¼ watt
R5,36: 1k, ¼ watt
R6: 180 ohms ¼ watt
R7: 10 ohms, ¼ watt
R8,9,15,16: 4.7k, ¼ watt
R10: 390 ohm, ¼ watt
R11,35: 100k, ¼ watt
R13: 10k pot
R14: 5.6k, ¼ watt
R20: 8.2k, ¼ watt
R26,30: 4.3k, ¼ watt
R12: 25k pot
R17: 56k, ¼ watt
R18: 20k, ¼ watt
R19,23: 220 ohms, ¼ watt
R21: 120 ohms, ¼ watt
R22,31,32: 3.9k, ¼ watt
R24: 390k, ¼ watt
R27,29: 1 meg., ¼ watt
R33: 1 meg pot
R34: 1.2k, ¼ watt
R25,28: 360k, ¼ watt
RFC 1: 100 microhenry choke
RFC 2: 24 " "
S1: SPDT mini toggle switch
S2: 1 pole, 3 position rotary switch
U1-4: LM307 op amps (or 741's)
Vrac: varactor diode, 3-34 pf.
Z1: 8.2 volt, ½ watt zener diode

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POWER TO THE PEANUT WHISTLE

By Michael Bryce - WB8VGE

There seems to be a lot more construction projects aimed at the QRP operator lately. Most of these either are receivers or transmitters of some type; but very little is said about how to get the necessary power to run them all.

Well, to get the power to the antenna we have to have it available for the transmitter. This is what this project is all about. Described here is a fully-regulated power supply that fits the needs of the QRP operator nicely.

The supply will run from 12 to 15 volts DC at 4 amps. The exact voltage is adjustable. The best feature is that all of the parts can be purchased from your local Radio Shack, although it would be much cheaper to get some of the parts at a local ham-fest.

The heart of the supply is a 723 IC regulator. R1, R2, and R3 form a voltage divider. R3 is used as the primary control for setting the voltage. R4 and R5 provide temperature compensation for the regulator chip. C3 and C4 provide RF bypassing.

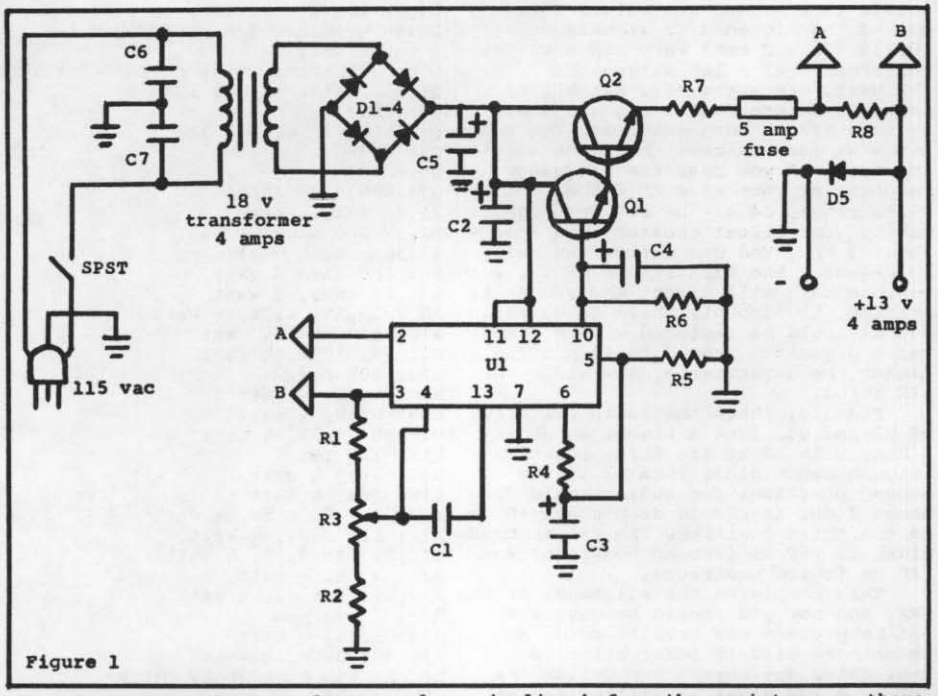

Figure 1

Voltage from the transformer and filter capacitor network is applied to the regulator on pins 11 and 12. C2 helps filter the waveform on the input to the IC. The output voltage comes from pin 10 and is applied to the base of driver transistor Q1. While I could have used one transistor, that would have placed a large amount of work on the chip and could ruin it. This way, we get some gain out of the Darlington pair, and the regulator chip remains nice and cool.

Q1 is a 2N3055 in a TO-220 case. Q2 also is a 2N3055, but in a TO-3 case. There is nothing wrong with using two transistors with the same case; I just used transistors I had on hand at the time. But I do like the TO-3 case for the output transistor. It seems to me you can get away with passing more current through it, and it is a bit easier to mount than the TO-220.

With the collectors of Q1 and Q2 connected together and then tied to filter capacitor C5, Q1's emitter is connected to the base of Q2. On the emitter lead of Q2 is the current limit resistor R7. This resistor prevents the transistor from being destroyed faster than the fuse could blow if the output were shorted.

R8 sets the current limit for the supply. The smaller the value, the greater the current. Pins 2 and 3 of the regulator are connected across the resistor. Note that the fuse is in line before the resistor, as there could be (and most of the time there is) a slight drop across the fuse holder. That way the regulator will compensate for that drop and supply the correct voltage.

The transformer is rated at 4 amps. Its voltage rating should be such that it supplies about 18 volts under load. If the voltage is too low, then you'll lose regulation. If it is too high, the pass transistor must dissipate the extra power generated as heat. Neither condition is desireable.

The main filter capacitor can be a bit expensive if bought at Radio Shack because two or three of their highest value electrolytics would have to be paralleled. The capacitor used in my supply came from a hamfest. The only thing to look for besides the value of capacitance is the voltage rating. If it's too high, things will get a bit warmer than necessary. If too low, the capacitor may be damaged or destroyed. While there are formulae for determining the amount of filter capacitance needed for a given current, get all the capacitance you can. The more the better. Tha capacitor in my supply has a rating of 15,000 mfd., at 20 volts.

Construction is very easy. Either a printed circuit board or perf board may be used. But it's easiest to use an IC socket for the regulator chip. Most of the parts mount on the board,

with the exception of the two transistors and the filter capacitor(s).

One of the 25-amp, diode bridge rectifiers is about the best bet for rectifying the AC. If a relatively small amount of current is to be used most of the time, then smaller, individual diodes can be used at a savings of a few piasters.

Connections between the filter capacitor C5, the rectifier, and the collectors of Q1 and Q2 should be made with heavy wire, such as #12. The emitter lead, connections to the current limit resistor, to the fuse holder, and to the output also should be made with #12 wire.

While Q1 does not require a heat sink, Q2 does. It has the capacity to dissipate 115 watts, if you could keep it cool enough. But since I don't think any of us have a cool river running nearby, we have to derate the transistor. While there are charts and formulae to figure this out, you can save that time and just take my word that a current of about 4 amps and a good sized heat sink will keep Q2 cool all day long.

Because the collectors of Q1 and Q2 are at the full supply voltage, be sure to insulate their cases from the supply chassis. If you don't, there will be lots of smoke as the power supply shorts out! The best way to insulate the transistors is to use mounting kits for the TO-220 and TO-3 cases.

In the interest of safety, there should be a fuse in the primary of the transformer. That fuse should be a 2-amp slo-blo type. The fuse on the output should be a 5-amp fast-blo fuse.

There are two capacitors, C6 and C7, on each side of the 110-volt AC line. They are there to keep RF out of the supply. To keep things running smooth, there is a 1N4003 diode across the output of the supply. The diode will clamp voltage spikes and keep them from getting inside the chip and causing all sorts of hate and discontent.

Testing the supply should take no time at all. You'll need some kind of load. Some low value resistors make a good test load. By using Ohm's Law, one can figure out the exact value needed. With a VOM connected across the output terminals, adjust R2 to 13.0 volts. Connect the load and the voltage should remain at 13.0. Just remember that with high current, only a few tenths of an ohm can mean a big drop in voltage. So don't use alligator clip leads.

This supply, by using the parts at your local Radio Shack, will run about 4 amps continuous, 6 amps peak. There is no overvoltage protection, but this could be installed easily. And one could draw more current by using a larger transformer, filter capacitors, and extra pass transistors connected in parallel. But I guess one big "plus" for operating QRP is that we don't need that much power to work the world!

One parting word for those who would use this supply with direct conversion receivers: About all I can say is "filter and bypass" to curtail any hum. Use coax lead for antennas, and be sure to provide a good ground for the supply and the receiver. There is some good reading on this subject in the receiver section of the ARRL's Amateur Radio Handbook.

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PARTS LIST

C1: 680 pf.
C2: 250 mfd. at 35 v. (electrolytic)
C3: 3.3 mfd. tantalium, 16 v.
C4: 4.7 mfd. electrolytic, 25 v.
C5: 10,000 to 22,000 mfd. -- use three 4,700 mfd., 35 v., capacitors in parallel
C6,7: 0.01 mfd., 1,000 v. disc ceramic
D1-4: for 4 amps, use RS 276-1180 or 276-1185; for 2 amps, use 276-1171 or 4 1N4001 diodes
D5: 1N4003 diode
Q1: NPN transistor 276-2020 (2N3055)
Q2: NPN transistor 276-2039 (2N3055)
R1: 1.8k
R2: 2.2k
R3: 5k trim pot
R4: 4.7k
R5: 6.8k
R6: 10k
R7: 0.47 ohms, 5 watts
R8: 0.5 ohms (two 1 ohm, 10 watt resistors in parallel)
U1: 723 IC regulator

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NOTES ON THE W3NQN PASSIVE AUDIO FILTER

By Thomas Davis - K8IF

Passive audio filters are old hat, you say? Nothing can beat an active filter built around those inexpensive little operational amplifiers, you crow?

Well, I'm here to tell you that the passive audio filters built around surlus 88 millihenry toroid coils are far from passe. And if you think op amps are inexpensive, how does "free toroid" strike you?!? I knew that would resurrect the old "scrounging" instincts that lurk beneath the surface of every ham! More on the freebies later. First, a bit of background.

Recently, I received a letter from Ed Wetherhold, W3NQN, ragrding passive audio filters using the aforementioned toroid coils. What interested me the most was that these coils were free, except for cost of shipping! I picked up the phone and called Ed to find out more about the filter, and he offered to send me a completed unit to test.

Two weeks later, the filter arrived. I quickly unpacked it and hooked it up to my PM-2B. Much to my surprise, the filter worked like a charm! The

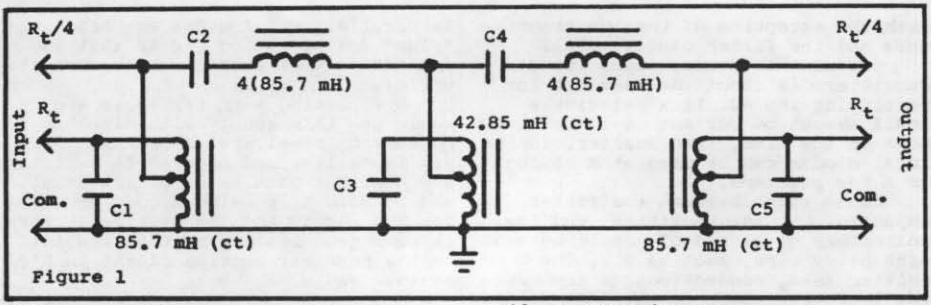

Figure 1

PM-2B sounded like a new rig!

This encouraged me to analyze the filter a bit more thoroughly. So during lunch one day at work, I fired it up in the lab on our HP 3585A spectrum analyzer. Ed designed the filter for a center frequency of 750 Hz and with an input and output impedance of 1280 ohms. After properly terminating the filter, here's what I found:

Center frequency = 760 Hz
6 db bandwidth = 252 Hz
- 6 db @ 629 and 876 Hz
- 60 db @ 323 and 1,296 Hz
Insertion loss = - 3 db

Not bad at all! The skirt selectivity is good, which is why the PM-2B sounded like a new rig, and why this filter would make a good outboard accessory for other QRP rigs.

The schematic in figure 1 has appeared in the December issue of QST (1980) and in the April issue of Ham Radio (1981). The heart of the filter is made up of two stacks of five 88 millihenry toroids and one outboard 44 millihenry inductor. Once the center frequency is selected, the capacitor values can be calculated from:

$$C1 = C5 = \frac{1}{(6.283 \times F)^2 \times L}$$, where L is 88 mh

C2 = C4 = 0.25 x value of C1 or C5
C3 = 2 x value of C1 or C5

For a center frequency of 750 Hz, C1,5 should be 0.512 mfd.

If you don't have the precise value capacitors, Ed can supply capacitors with a 1 percent tolerance for a small fee. Just indicate your chosen center frequency.

The only drawbacks to the filter are its size (2"hx3"wx4"d) and its weight (440 grams). Also, the filter's impedances must be matched, requiring small matching transformers when used with rigs having an 8 ohm output impedance.

But the filter also has some advantages over it's "active" counterpart. It doesn't draw any power, and "rining" is not a noticeable problem (as it is with active filters).

I'd rate this filter as "good". If you're interested in finding out more about it and about the free toroids, mail your queries to:

Ed Wetherhold - W3NQN
102 Archwood Ave.
Annapolis, MD 21401

The toroids are being made available through the courtesy and cooperation of the Chesapeake & Potomac Telephone Company, of Maryland. And when writing to Ed, please enclose an SASE!!!

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MORE ON MILLIWATTS FROM AN ARGONAUT

By Chris Page - G4BUE

Since writing "Milliwatts from an Argonaut," I have continued experimenting with very low power, and a summary of my experiments is set forth below.

In order to obtain even lower input power levels than the 150mW mentioned in my previous article (see July QRP Quarterly), I gradually reduced the collector voltage to the PA transistors by replacing the standard 12 volt line with batteries -- depending upon the voltage required. I finally finished up with a 1.5 volt dry cell, and by using a voltage divider, reduced this to 1 volt. By driving the PA to 10 mA, I had an input power of 10 mW. In this manner, I worked three US stations (including a W8) during the ARRL CW contest in March.

I was over the moon at having contacted the USA with an input of 10 mW when I began to wonder how much output power this level yeilded. A close friend of mine, who also is a ham, works in a test lab and has access to some very good equipment, including a very expensive oscilloscope. When the Argonaut and the necessary ancillary equipment were hooked up, we began measuring the output power. With an input of 5 watts, the Argonaut gave just over 2 watts output. Then, as the input was reduced, the efficiency of the PA also dropped, until finally at the 10 mW input level I was obtaining 576 microwatts output! I had worked across the Atlantic on 576 microwatts, and I just couldn't believe it! The figures were checked and rechecked, and sure enough, 576 microwatts was the output.

One reason I had found the figure hard to beleive was that it represented a PA efficiency of 4.6 percent.

Obviously, by reducing the collector voltage to 1 volt, it was altering the impedance of the PA, making it less efficient. The 4.6 percent figure was lower than I had expected. As a result, I started experimenting with different voltages and current while monitoring the output to find the most efficient combination for running the PA at different input levels. The results are set forth below:

Input power	Voltage	Current
5 watts	10.00	500 mA
3 watts	7.50	400 mA
1 watt	4.25	235 mA
750 mW	3.50	214 mA
500 mW	3.00	166 mA
350 mW	2.75	127 mA
250 mW	2.25	111 mA
150 mW	2.00	75 mA
100 mW	1.60	62.5 mA
75 mW	1.40	53.5 mA
50 mW	1.15	43.4 mA
30 mW	0.75	40.0 mA
15 mW	0.65	23.0 mA
10 mW	0.50	20.0 mA
5 mw	0.40	12.5 mA

Since arriving at the above figures, I have added an accurate voltmeter, a 25 mA meter, and a variable power supply to the PA board. Interestingly, to obtain the best efficiency in the PA at 5 watts input, I found it necessary to reduce the 12 volts at the PA to 10 volts and increase the drive to 500 mA.

By using the PA in a more efficient manner, it has been easier to work new countries at the different milliwatt input levels. On one occasion, I adjusted the PA for an input of 5 mW and called N1YL, who was calling CQ during a contest. She came back and gave me a 599 after copying my signal correctly and then copied my report to her. Although the 599 contest report does not mean anything, I had worked across the Atlantic with 5 mW. I was now beginning to wonder if it would be possible to obtain a "Million miles per watt" award or endorsement for the QRP ARCI KM/W award. In fairness, I must admit that the output from the Argonaut during the 5 mW QSO was much higher than the 10 mW QSO during the ARRL contest, when the PA was limping along with a 4.6 percent efficiency factor.

Since working N1YL, I have worked a W4 in Virginia, also at 5 mW. But I'm not going to count this QSO toward an award because I initially made the contact at 5 watts input and then gradually reduced power. The contact does show, however, the kind of distances that can be covered with very low power!

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QRP TO THE RESCUE

By Al Goeppinger - W6FXL

It was another hot Friday noon (June 19, 1981) as the net control station, George Wiley (W6VKT) in Sacramento, Calif., began to close the daily 40 meter Pacific Coast Net. I was sitting in my shack in Escondido, saying my 73s when a signal broke in, "W6FXL de KQ6O -- emergency traffic here."

With the help of another member of the net, Gene Zaluskey (K6IE), the calling station was moved to a clear frequency away from the net. For the next four hours, KQ6O remained in CW communication with W6FXL. During this time, messages were relayed between the two stations and thence via land line to the government agencies involved.

KQ6O, Boyd Smith, was the only adult with a group of six Boy Scouts (Troop 50, Southern Sierra Council) camping in a very remote area of the Sierra Nevada Mountains, on the Kern River southwest of Mt. Whitney. There they encountered Fred Vernon, an adult leader of a hiking group from the First Baptist Church of Santa Barbara. Fred was searching for two brothers who became separated from the leaders somewhere back up the trail. Fred had hiked all the previous day and throughout the night, covering 43 miles in his attempt to find the missing boys. Another adult leader had gone to an outpost ranger station about two miles from camp, but he found it unattended.

A series of messages between the two amateur stations obtained the immediate help of the US Forestry Service, and Tulare County Sheriff Hopkins soon had the information needed to arrange for his search and rescue team to look for the missing boys. By late afternoon, this team had located the boys in good condition, and it is understood that they were picked up and taken back to their group. They were found separated from the searchers by a two-day hike!

The good news about finding the boys was immediately relayed via radio to Fred Vernon, who remained with KQ6O at the Little Kern Lake camp. Since Fred found it necessary to abandon his back pack and food, the Scouts provided him with one of their bags and food for an overnight stay. In the meantime, the Scouts were able to hike two miles to the point where Mr. Vernon's friend, John Bruce, was waiting. They guided him back to the Scout camp. Because Mr. Vernon's feet were in bad condition, he could not hike out. So arrangements were made via ham radio to have a helicopter pick up Mr. Vernon and Mr. Bruce the following morning. From there, they were flown to Whitney Portal for a reunion with their group

Throughout the afternoon, K6IE

helped to monitor the frequency and act as a backup station for W6FXL.

Much credit goes to Boyd Smith (KQ6O), who with some misgivings had decided to take his Heathkit HW-8 transceiver along with his other camping gear on his back! Powered by nine alkaline "C" flashlight batteries, and with the help of an inverted vee antenna, the rig put out a solid signal for four hours on Friday afternoon and again for another half hour on Saturday morning. At 8 a.m., Boyd again contacted W6FXL to report the successful pick-up of the two weary searchers by the helicopter. "Mac" Cowden (W6TBZ) of Clear Lake was also able to QSO him and to help in pulling the signals through very heavy Mexican phone QRM on 7.089 KHz.

We salute the Scouts and their Scoutmaster, KQ6O. They proved the meaning of their motto, "Be Prepared."

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HW-8 MODS: RECAP OF THE RECAPS

By John McNeil - WA2KSM

By the letters I've received concerning my first article, it seems we have a lot of new members in our ranks. With this in mind, I'm going to devote this column to recaps of some worthwhile HW-8 modifications that have appeared in other publications.

First, I'd like to mention a series of articles that appeared in the August and October 1977 issues of CQ Magazine. Ade Weiss, WØRSP, wrote a fine series dealing with improved sensitivity on 15 meters, adding an additional audio filter, an SWR/wattmeter, a pilot lamp to see the meter in the dark, receiver incremental tuning, and an audio amplifier to increase your listening pleasure. Reprints have been advertised in some of the amateur magazines for a $7 donation to support the Milliwatt Trophy. If you desire reprints, you can mail your request to Ade at:

83 Suburban Estates
Vermillion, SD 57069

Now for the recaps. In the July 1978 issue of the QRP ARCI newsletter, David C. Rife, WA2PGE, suggested that by removing zener diode ZD1 and 470 ohm resistor R33 from the circuit board, then mounting these components somewhere else, excessive receiver noise could be eliminated. ZD1 is located near the VFO of the HW-8. Zeners have been known to be noisy, and in some cases have caused problems in circuits I've built.

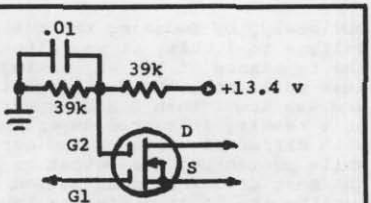

Figure 1

David suggested -- and I took him up on it -- removing R33 and ZD1 from the circuit board and placing them on a three-terminal strip. Then mount the terminal strip (after the resistor and zener are soldered onto it) under the ground/standoff for the audio amplifier board that's mounted on the right side of the cabinet. Run two wires, twisted together, back to the appropriate holes on the PC board.

This is a worthwhile improvement, and a reduction in receiver noise will be noted.

Another improvement that's really super has appeared in SPRAT, the quarterly newsletter of the G-QRP Club. Hal Graepel (EI1DA) suggested increasing weak signal reception by replacing the front end FET (MPF-105) with a 40673 dual-gate MOSFET. The circuit is shown in figure 1 above.

Hal summed up his modification in this way: "I now copy signals S5 which I could not hear before. Even on 7 MHz at night there is an improvement with the RF gain down."

To make this modification, remove Q1 from the circuit board. With a #56 drill bit, drill a hole in the PC board to accomodate the additional gate lead. The other components will be mounted on the foil side of the board. You might want to cover the resistors with some heat-shrink tubing, or some other insulator, to prevent their shorting against the foil. I soldered the resistor leads directly to the gate 2 lead of the MOSFET after it comes through the circuit board. Clip off excess lead lengths, and make sure there are no shorts. If you want to be fancy, install a socket to interchange the new and the old transistors. You'll notice a difference!

Well, that sums it up for now. But don't tighten the covers too much. There's more to come!

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EDITOR'S SOAPBOX (Continued)

to pass the typewriter on to the next volunteer.

So, if you have an interest in editing and producing the QRP Quarterly, let Thom Davis (K8IF) know quickly! Whoever takes the reins not only inherits (if he or she wants them!) the reusable logos, but I'll even throw in my drafting template of circuit diagram symbols! Gee, that's a bargain that's hard to pass up! And I stand willing to offer whatever guidance the new editor feels he or she needs to get rolling. As for the rest of the membership, you might want to be patient, allowing the new editor to put out a relatively small January issue so he or she can get the hang of things. It's been a joy working with you all, and I'm grateful for the many letters of support and for the quality articles submitted during my tenure. I hope that continues under the new editor! (By the way, this supercedes the notice you'll read in the secretary's column announcing my reelection as editor!)

With the heavy stuff out of the way, it's time to debunk some misinformation. Those of you who also are members of the G-QRP Club may recall that in a recent issue of SPRAT, an announcement appeared heralding the end of the Argonaut -- that Ten Tec was halting production of the popular rig.

Being an Argonaut enthusiast myself, and noting that the bulletin in SPRAT was not straight from the horse's mouth, I put in a call to Ten Tec and had a nice chat with Joe Redwine, a customer service representative.

Mr. Redwine says the Argonaut is still very much a part of Ten Tec's ham radio lineup, and will remain so for the foreseeable future.

Of course, not even the Argonaut is eternal. "Even when it is phased out," says Mr. Redwine, "Ten Tec will still be very much involved in QRP."

He doesn't rule out the possibility of that phase-out. He notes that if Argonaut sales drop substantially as a result of the introduction of the Argosy -- a drop Ten Tec feels is likely -- then the Argonaut will be cut from the line.

Why would the Argosy bite into the Argonaut's following? Mr. Redwine explains that basically, the Argosy is a repackaged Argonaut. Over the years, he says, Argonaut owners have complained that the rig's accessories are all outboard. And when the FCC instituted its ban on 10 meter amplifiers, Ten Tec ceased production of the outboard linear for the Argonaut. The Argosy, Mr. Redwine says, is an Argonaut with accessories (purchased as options) built into one cabinet, with all controls for the options already on the rig. Hence, he says, "It's a natural step up from the Argonaut."

So in one sense, Ten Tec does foresee the day when it no longer will offer the Argonaut. But that will happen only if and when the sales numbers justify such a decision.

Finally, the club's board of directors will be reconsidering the 50 watt club membership limit. That's why your response to the poll on the back page of this issue is so important. Despite the change in editors, continue to send the poll results, or I should say, your poll sheet, to me. Use either the form on the back page or a reasonable facsimile. And while, I'm thinking of it, continue to send your renewals to me, and I'll continue to process them until a new editor is found. I'll then forward all renewals to him or her. Watch the January issue for changes in the editor's address, which you should use for all renewals and questions concerning your subscriptions.

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"Q" SIGNALS YOUR ELMER NEVER TAUGHT YOU

By Noel Novinson - N6DQC
via the Amateur Radio News Service

The following is a list of little-used Q-signals. Their meanings often need to be expressed with brevity and clearness in our amateur radio work. So learning them should be an important order of business for us all.

QCK - Don't bother trying to listen on the other sideband; I am a duck.

QIK - Please stop transmitting at this time. You're boring!

QOL - Your signal is so strong it just blew out my front end, and I'll be seeing you in court!

QFF - Please send louder; there's a French Fried potato in my ear.

QOD - Sorry about my sloppy sending, but I'm high on drugs at this time.

QHT - Please stand by, my antenna has just fallen into the bathtub.

QDR - I have traffic for Stonehenge. Do you speak Druid?

QME - Sorry about taking so long to come back, but I had to go out and milk the elk.

QHI - Please tell funnier stories at this time.

QHH - Please increase your power and/or talk louder. It's hard to hear you over the tinkling ice cubes and ripping clothes.

QBL - Sorry, I can't QSL. I'm not licensed!

QCT - Your RST isn't much, but you're coming in fine on Channel 2.

QDT - I see you're having difficulty tuning up. Please consider an easier task like watching TV or counting your toes!

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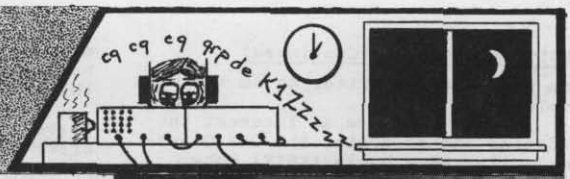
QRP CONTESTS



QRP CONTESTS

By William Dickerson - WA2JOC
QRP ARCI Contest Chairman

I really appreciate the response to our January SSB and April QSO parties. I have received a lot of suggestions for future contests, which I'll take into consideration.

The biggest problem for me has been the large variety of scoring methods used by contestants, which hopefully will be overcome by the new scoring formula. I finally went back and scored all 100-plus logs for the April QSO Party, which took about 40 hours. The scoring problem was what led to N4BPs move to first place in the January SSB contest. He had scored his log incorrectly, and I didn't catch it the first time around. In addition, I neglected to include the log and score of AE9G in the April results. Hans was in Wisconsin and tallied 488 points. I also had the call of WA1UGF incorrect in the Massachusetts column. Sorry, fellas!

A number of you have written to ask why I haven't included power, rigs, etc., in the results. Frankly, it's because of time. Also, I have attempted to come up with a results format that is likely to appear in major magazines.

Dates for the 1982 QSO parties are: April 17-18, SSB; October 16-17, CW. We will be offering special awards for combined scores -- details in the next issue.

Please note that there is a MAXIMUM time limit in the October 1981 QSO Party. This was left out of the last issue. Participants must be off the air at least 12 hours of the 36, in not less than 6-hour periods.

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ON-THE-AIR ACTIVITIES

OCTOBER 17-18: QRP ARCI 20th Anniversary QSO Party (CW). Starts 1200 UTC Saturday, Oct. 17. Ends 2400 UTC Sunday, Oct. 18. Participants must be off the air at least 12 hours in not less than 6-hour periods. EXCHANGES: Members--RST, state/province/country (SPC), QRP number; non-members--RST, SPC, power output. Novices and technicians add /N or /T after QRP number or power. Stations may be worked once per band for QSO and multiplier credits. Each members contact counts 5 points, regardless of location. Each non-member US or VE contact counts 2 points. Non-member Novice and Technician contacts count 3 points, and non-member contacts other than W/VE count 4 points. MULTIPLIERS: 4-5 watts ouput, x2; 3-4 watts output, x4; 2-3 watts output, x6; 1-2 watts output, x8; less than 1 watt output, x10. BONUS MULTIPLIERS: If 100% natural power (solar, wind, etc.) with no storage, x2. If battery powered, x1.5. SCORING: QSO points x total SPC x power multipliers x bonus multiplier (if any) = claimed points per band. Add band totals for grand total. Please enclose separate work sheet showing the above calculations and times off the air. SUGGESTED FREQUENCIES: 1.810, 3.560, 7.060, 14.060, 21.060, 28.060, 50.360 MHz. NOVICE FREQUENCIES: 3.710, 7.110, 21.110, 28.110 MHz. All frequencies plus or minus to clear QRM. Any VHF/UHF contacts must be direct -- no repeater contacts. CALLING METHOD: CQ CQ QRP de your call. AWARDS: Certificates to the highest scoring station in each SPC with two or more entries. Certificate to highest scoring Novice/Technician overall. LOGS: Send full log data plus separate work sheet, as described above. No log copies will be returned. Please indicate if you are a Novice or Technician. All entrants desiring results

Ah! Field Day! Somewhere outside of Brighton, Mich., sat Marty Bowyer (K8BX), who, along with K8IF, WA2JOC, and WD8MFP, scored 8,295 points (ARRL scoring) or 5,274 points (Milliwatt FD scoring) -- whichever you prefer -- for the dear old QRP ARCI. These stalwarts, along with "LID" (seen atop the Argonaut), operated in the 2 transmitter class.

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and scores please include a #10 envelope with postage (or IRCs) to cover 1 oz. It is a condition of entry that the decision of the QRP ARCI Contest Chairman is final in case of dispute. Logs must be received by Nov. 20,1981 to qualify. Logs received after that date or logs missing information will be used as check logs. Send logs and scoring information to the Contest Chairman. See Page 2 for address.

OCTOBER 24-25: CQ WW SSB Contest with QRP section.

OCTOBER 24-25: Houston Area QRP Club's Halloween Bash and Witch Hunt. This is the quarterly operating event sponsored by the Houston Area QRP Club. It's a CW and SSB contest, with prizes going to the highest scorers among members and non-members. RTTY and SSTV also permitted. Starts noon CDT Oct. 24, 1981. Ends noon CST Oct. 25, 1981. EXCHANGE: Members give RST, SPC, and club number. Non-members give RST, SPC, and power output. POINTS: Club members count 10; non-members count 1. Non-members other than W/VE count 2. Bonus point for portable operation, 300. CALLING METHOD: CQ CQ QRP de your call. Multipliers: 0-1 watt output x10; 1-5 watts output x5; 5-10 watts output x3; 10-25 watts output x2; 25-50 watts output x 1.5; more than 50 watts output x1; MODE MULTIPLIERS: CW 2, SSB 1, RTTY 5, SSTV 10 (but there must be a two-way exchange of frames). SCORING: Multiply number of contacts by power multiplier. Multiply that product by each mode multiplier as applicable. Example: 150 CW contacts (300 pts.) at 5 watts (1,500 pts.) plus 62 SSB QSOs at 1 watt (620 pts.) plus one RTTY QSO (5 pts.) at 10 watts (15 pts.). Add bonus points for portable (Ø) for a claimed score of 2,135 points. LOGS: Send full log data and scoring information to Leo Delaney KC5EV, Box 383, Spring, TX 77373. Send Leo a #10 envelope SASE and he'll send you special log sheets, a copy of the rules, and information about the Houston club. FREQUENCIES: CW is the same as the QRP ARCI. SSB: 1.810, 3.985, 7.285, 14.285, 21.385, 28.885, and 50.385 Mhz. All frequencies plus or minus to clear QRM.

OCTOBER 31-NOVEMBER 1: AGCW-DL QRP activity weekend.

NOVEMBER 8: Joint QRP ARCI/G-QRP Club activity period. Time: 1500-1700 and 1800-2000 UTC. Frequencies: 14.060, 21.060, 28.060 MHz.

NOVEMBER 21-22: 1981 VK versus the World CW QRP Contest. Sponsored by the VK CW QRPp Club, this contest it directed to all CW enthusiasts worldwide who elect to tackle that extra challenge. Contestants may work DX or their own country for scoring. QRO stations are eagerly invited to participate but must submit contest logs with QRP stations only to qualify for the QRO section of the contest. DATES: Saturday, Nov. 21 and Sunday, Nov. 22. DURATION: 0000 UTC Nov. 21 to 0000 UTC Nov. 22. MODE: CW only. BANDS: 160-10 meters. CONTEST CALL: CQ QRP TEST. SECTIONS: Station categories QRP or QRO single op, multiband, or single band. Period categories are full period (48 hrs.) or half period (24 hrs.) Half period is any consecutive 24 hrs. EXCHANGE: VK CW QRPp members give four digits, membership number plus consecutive serial number starting from Ø1. If 99 is reached, start again at Ø1. Non-member QRP entrants give five digits, RST report plus consecutive serial number.(see above.) QRO stations (QRO/QRP contacts valid only) give three digits, usual RST. SCORING: For all QRP contestants (not exceeding 5 watts output) each contact shall score points based on the following table:

0-1 watt	6 points
over 1 watt to 2 watts	5 points
over 2 " " 3 "	4 points
over 3 " " 4 "	3 points
over 4 " " 5 "	2 points

QRO contestants using more than 5 watts power out score one point per contact. MULTIPLIERS: Number of VK CW QRPp members worked on each band (four digit reports). No. of DX QRP stations worked on each band (five digit reports. CONDITIONS: Stations may be contacted only once on each band. Separate log sheets are required for each band. Each logged QSO must show: date, time (UTC), stn. worked, number sent, number received, multiplier, pwr. output, and points claimed. GRAND TOTAL SCORE equals total points from all bands x total multipliers from all bands. All entries must have front summary sheet showing: calculation of grand total score, name, address, call sign, signature, and declaration "I certify that all entries in my contest log sheets are true and honest." CERTIFICATES: To the VK CW QRPp Club member with the highest grand total score in each section; to the non-member QRP contestant from each coutnry with the highest grand total score in each section; the QRO contestant from each country with the highest grand total score in each section. Send logs and entries to: VK CW QRPp Club, 59 Collova Way, Wattleup 6166, Western Australia. Entries must be received no later than Jan. 31, 1982. Results will be available by the end of February and will be posted to non-member contestants for 1 IRC (DX) or 22-cent stamp (VK stations).

NOVEMBER 28-29: CQ WW CW Contest with QRP section.

December 26-31: G-QRP Club Winter Sports.

Here's the QRP ARCI monthly informal QSO party band plan. Informals are held on the first Sunday of each month: Oct. 4, Nov. 1, Dec. 6, for this quarter. Try SSB on the half-hour. (All times are in UTC.)

80M 0100-0300
40M 1500-1600, 1900-2000, 2300-0000
20M 1600-1700, 2000-2100, 0001-0100
15M 1700-1800, 2100-2200
10M 1800-1900, 2200-2300

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CLUB AWARDS UPDATE

By Doug Crittendon - WB1ESN
QRP ARCI Awards Chairman

Greetings all! I'm glad to see the long, hot, busy days of summer drawing to an end and the fall DX season, with better band conditions here again. I hope there is a similar improvement in awards applications and in QRP activity in general.

Only 18 applications for awards found their way to my mailbox during the last quarter -- that should tell the story for the summer!

Of those who did apply for awards, we have some real achievers. I note that K4KJP has continued to pioneer the real meaning of 1,000 miles-per-watt with a 45,000 mile-per-watt effort on 432 Mhz. He was running 0.001 watts! He also has been credited with the club's all-time record: 2,566,666 miles-per-watt on 21 MHz in May of 1978. Those closest to him are WA6JPR and W6YTP, who had a few QSOs together in May of 1968 at 0.000354 watts INPUT, for 1,000,000 MPW on 40 meters CW. Any takers for 2,600,000 miles-per-watt??

Other achievers were K8IF, who had a nice shot to Ceuta despite the rugged band conditions and QRM on 40 meters. Two Portland, OR, Novices snagged Colin Steveson, VK2VVA. QRP work, especially DX, is tough on the Novice bands, so these two deserve a fine round of applesauce. Another who made good as a Novice (she now has her General) is KA4FJD, who worked all 50 states as a Novice op.

The DX Baron for the Quarter is W6YVK with 125 countries confirmed and more cards on the way.

And it's time to play catch-up for a moment. K3TKS has earned a number of awards and never was recognized for them. Some of these will include net awards, which fall under the perview of Red Reynolds, K5VOL. At the risk of thinning his column a bit, I'll mention the net awards for K3TKS here, too. He has earned WAS QRPp with seals 30-45, a QRP 25 award with 50 and 100 QSO endorsements, and he is the only member so far to earn QNI certificates for all three nets -- 80, 40, and 20 Meters -- under the old net system.

Many thanks to all of you who worked for and applied for awards. Keep up the good work!

I hope to work many of you during the October QSO Party. I will be putting in at least every third hour on the Novice bands. Let's get those Novice QRPers interested in having a go at QRP contesting and in taking a shot at the QRP 25 award.

Finally, I hope to have a new awards package ready by the end of November. Send me an SASE for copies, with postage to cover 2 oz. By the time you read this, the new QRP WAC award will be ready. That'll leave only the DXCC certificate to reprint (no date set on that yet) as well as the new QRP 25.

I welcome all comments and criticism and suggestions. Send an SASE if you wish a reply.

Now, here are the awards listings for this month:

KM/W-CW:
K8IF to EA9GT, 2w, 2.042 KM/W, 7 MHz.
VK2VVA to VK6NLU, 2w, 1.004 KM/W, 28
UY5OQ to WD4DSS,(rcvg), 3.75 KM/W, 21
WD4DSS to UY5OQ, 1.5w, 3.75 KM/W, 21
KA7FEF to VK2VVA, 2w, 3.843 KM/W, 28
KA7FEE to VK2VVA, 2w, 3.843 KM/W, 28

KM/W-SSB:
WB5SOO to PY1MEB, 2.5w, 1.921 KM/W, 21
K4KJP to W4EQR, 0.001w, 45 KM/W, 432

WAS-QRP:
KA4FJD, all 50, Novice, 2.5 w, CW
N5CLD, 45 states, 2w, CW

WAS-QRPp:
WBØWIW, 30-state seal
WB9HPV, 30-state seal, 28 MHz

WAC-QRP:
W6YVK, SSB, 2.5w

DXCC-QRPp:
KC4MK, 50 countries, 2w, CW

DXCC QRP:
W6YVK, 125 countries, SSB, 2.5w

QRP 25:
W6RCP, 100 endorsement
WB8BSB, 50 endorsement
WD4BLU, basic certificate

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HEAVY TRAFFIC: net news

By Robert "Red" Reynolds - K5VOL
QRP ARCI Net Coordinator

The 25 QNI certificates are now available to those members completing 25 check-ins into any individual net. Subsequent 25 QNIs in another net will earn a sticker. A new procedure for awarding the certificates is being used. After 25 check-ins, a member must apply to the awards manager for the certificate, for which there is a $2 fee. Subsequent endorsements, also available from the awards manager, are $1 each. The net managers will send a list of those qualifying for the QNI certificate to the awards chairman at the end of each month. A member must

be on this list to get an award. As a result, applicants do not need to send in a copy of their log to verify their claim to 25 QNIs.

Because the lists are submitted once a month (at the end of the month) please do not apply for a certificate or endorsement until after the end of the month in which you qualified. The list of those who qualify for net awards also will go to each net manager so they can remind those hams who may not be keeping their own records of their eligibility.

Please note the net changes listed that will take effect when we move our clocks back Sunday morning, Oct. 25. Also note the TCSN SSB net is now on 20 meters, and the TCNN Novice net is on 40 meters.

A special note to the GLN area members: Both nets are in need of NCSs. Teaching assignments have just about wiped out the GLN-80 NCS, leaving K8IF to handle it most weeks. Also, Thom is running the nets many weeks on the GLN-40. If this situation is not corrected soon, K8IF's finals with fizzle and the net will be dropped from the schedule.

~~A special note to GSN area members. The old GSN-80, which moved to 40 meters for the summer, will remain on 40 and become the GSN-40. QNIs before this change will be retained.~~

Our SSB net on 20 meters meets one hour prior to the CW net on 20. This seems to help generate SSB activity, so how about giving it a try, the rest of you!

Also, please remember that nets meeting within the time frame for our contests are suspended during the contests.

Here are the nets as of Oct. 1:

TCN-20, 0001 UTC, Monday, 14.060, K8IF
TCSN-20, 2300 UTC, Sun., 14.285, WA5TFU/Ø (SSB)
TCNN-40, 2359 UTC, Mon., 7.110, WA2KSM
NEN-40, 1300 UTC, Sat., 7.040, WB1ESN
SEN-40, 0100 UTC Wed., 7.040, WD4LOO and WA9WZV/4
GSN-80, 0200 UTC, Thur., 7.040, K5BOT (returns to 3.560 after time chg.)
SWN-40, 1600 UTC, Sat., 7.040, W6RCP
GLN-80, 0200 UTC, Thur., 7.040, K5VOL/9 (returns to 3.560 after time change)
GLN-40, 1500 UTC, Sat., 7.040, K8KIR

Note that all nets will remain on the same UTC when we move off of daylight savings time.

For those wishing to check into the Michigan QRP Club nets, here is their schedule as of September:

Tues., on 7.270 at 2400, after Oct., at 0100 UTC on Wed.
Wed., on 3.535 at 0100, after Oct., at 0200 UTC
Sat., on 21.060 at 1800 UTC (beginning Dec. 5, 1981)

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FROM THE SECRETARY'S BLOTTER

By Edwin Lappi - WD4LOO
QRP ARCI Secretary-Treasurer

The club has received the sad news that because of serious health problems, K7ZVA had to resign his positions on the board of directors and as vice-president of the club. It indeed is a serious loss; he will be difficult to replace.

Therefore, I am asking for nominations for this open position on the board of directors from the membership at large. When nominating a member, please be sure to supply me with a short profile of the individual and a statement of how the nominee views club policies and the club's future. This statement probably should come directly from the nominee, including the personal profile. Nominations should reach me no later than Nov. 10, 1981 so that a ballot can appear in the January issue fo the QRP Quarterly.

Regarding the most recent election for board of directors, I'd like to thank the 116 members who had the interest and took the time to send me your ballots. As to the three late ballots, I'd like to remind members that if you don't mail your ballot at least three days prior to the deadline, it won't reach me in time. I have to stick to the deadline so that I can get the results compiled and report them to all club officers and board members, as well as meet the editor's deadline for the Quarterly. Please remember that if you don't want to cut up your Quarterly, a photocopy or handwritten facsimile of the ballot is fine, as long as you include your name, call, QRP number. On short ballots, you also can vote by radiogram, but again be sure to include all of the above information. I am active on several traffic nets and will readily receive your ballots. Note that this also can save you some postage, so why not use the amateur traffic system?

Remember that as of October 1, 1981, the club membership fee rose to $6.00 for US, $7.00 for DX (or equivalent IRCs.). Renewals rose to $5.00 US, and $6.00 DX. This was necessitated by the increase in postal rates.

NOTE: some members have been requesting replacement membership certificates when they upgrade. It is club policy to replace free of charge membership certificates lost because of disasters such as fire, flood, etc. But there is a $1.00 charge if you simply want a certificate reflecting changes in your call after upgrading.

Finally, it is with pleasure that I announce the following results of recent elections of officers:

To the board: W5QJM, WA2JOC, K5VOL, and K4JO.

To officers posts: President, K8IF, Vice-President, K5BOT; Sec/Tres.,

WD4LOO; Awards Manager, WB1ESN; Contest Chairman, WA2JOC; Publicity, W5QJM; Editor, QRP Quarterly, N1ABS; Legal Officer, W4WQW. The board members' terms begin Jan. 1, 1982 and run for three years. The officers' terms begin Jan. 1, 1982 and run for two years.

Let's welcome the following new members when you hear them on the air!

KA9LML, Charlotte Robertson, #4884
KA7BMB, Chester Price, #4885
WA7VEH, William Bingham, #4886
WA4PHM, Neal Wingate, #4887
N4DSK, Chris Echard, #4888
KA4UPQ, Robert Crowell, #4889
KD6OQ, Joseph Knowles, #4891
G4EBO, William Gibbs, #4892
VK8NJE, John Elliot, #4890
KN8L, John Phillips, #4870
WB3HRO, Anthony Schindler, #4871
WA4CPR/KL7, Dennis Heaton, #4867
WD9GBH, Herbert Morgan, #4869
G3VTT, Laurence Turner, #4868
K5NT, David Farris, #4872
K5WNH/Ø, James Travis, #4873
NØART, Todd Mitchell, #4874
KA8EDB, Neil Stewart, #4875
KA9LMJ, Wanda Grimsby, #4876
K5IS, Jerome Doerrie, #4877
N8BQW, Kenneth Zuercher, #4878
KB3QS, Robert Diggs, #4879
DK3LN, Roland Seifert, #4880

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CLUB ITEMS

QRP ARCI club rubber stamps for use with your QSLs or personal stationery! Comes in three styles:

A) 5/8" x 3/8" stamp of club logo. $2.00
B) 1-1/8" x 5/8" stamp of club logo. $3.50
C) Same size a B but includes your call and QRP number. $4.95

All prices are post paid. Order from:

Mickey Koelble - N8BKB
324 Oneida NW
Canton, OH 44708

QRP ARCI name/call badges! These sharp-looking plastic badges are 2" x 3", have black lettering on white background, and includes your name (first or last), call, and the club logo. Price: $4.00. Order from:

George Collier - WØEG
1816 Third Ave.
South Anoka, MN 55303

QRP ARCI personalized QSL cards! These card incorporate your call, QRP number, the club logo, and the standard reply form. Price $19.95 plus $2.50 for shipping, per 1,000 cards (min. order). Order from:
Certified Communications
4138 S. Ferris
Fremont, MI 49412

QRP Quarterly back issues! We have a limited number of back issues, which are available for $2.50 each to cover cost of postage and handling. Make check or money order payable to the club, and mail your order to the Editor (see page 2 for address).

From the club Secretary-Treasurer --
(1) Club bylaws - send #10 envelope SASE for 1 oz.
(2) Club history, 1961-71, $1.00 plus SASE for 2 oz.
Supplement I, 1971-74, 50¢, #10 envelope SASE 2 oz.
Supplement II, 1974-75, 50¢, #10 envelope SASE 2 oz.
Supplement III, 1975-77, 50¢ #10 envelope SASE 2 oz.
(3) Membership applications, 16 for $1.00
(4) Membership roster, 50¢, #10 SASE 2 oz.

Make check or money order payable to club and send your order to the Secretary-Treasurer (see page 2 for address).

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WORLD QRP FEDERATION REPORT

By Peter N. Spotts - N1ABS
QRP ARCI WQF Representative

This is the first of what will be periodic reports on what's happening with the World QRP Federation.

Topping the list is the WQF's worldwide QRP contest, currently scheduled for July 1982. Details on this event will appear in a later issue, but you might want to begin thinking about scheduling some vacation time for July so you can participate!

Speaking of worldwide activities, you may have noticed in the contest listings the joint activity period in November between this club and the G-QRP Club of Britain. I hope you'll take the time to participate in the event. It's not a contest, but don't let the lack of "wallpaper" deter you from joining in the fun!

The purpose of our joining what has been a long-time scheduled event for the G-QRP Club is to foster closer ties with that and other clubs across the pond. If we want to see more overseas participation in our activities, we have to show a genuine interest in their activities, too. Besides, it's a good way for you new members to pick up some QRP DX!!

Because this is an introductory article, I'll sign off with a list of current member-clubs and their WQF contacts. There's nothing wrong with a little cross-pollenization, so if you feel like joining one of these clubs, in addition to your QRP ARCI membership, have at it!

PY-QRP: Paulo Moser - PY2TU
PO Box 8268
01000 Sao Paulo, SP Brazil

I-QRP: Alessandro Santucci - IØSSK
Boccanegra 8
00162 Rome
Italy

MI-QRP-C: Marion Stoner - W8VWY
12217 Airport Rd.
DeWitt, MI 48820

G-QRP-C: Gus Taylor - G8PG
37 Pickerill Rd.
Greasby
Merseyside L49 3ND
England

VK-QRP-C: Jack Swiney - VK6JS
59 Collova Wy.
Wattleup, 6166
West Australia

AGCW-DL: Ulrich Eberhardt - DK9TZ
Uhlandshohe 9/1
7260 Calw
West Germany

Benelux QRP: F. Priem
PO Box 15
2100 AA Heemstede
Netherlands

JARL QRP: Tadasi Okubo
5288 Kurihara
Zama 288
Japan

P.S. There's another advantage to joining these clubs and receiving their newsletters -- great foreign stamps for your stamp collection!

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ANNOUNCING THE US QSL SERVICE
(Not affiliated with QRP ARCI)

This is an incoming and outgoing service that allows all US and Canadian amateurs to send QSLs to other US and Canadian amateurs at a minimum of cost and effort. The service is owned and managed by active hams. Available to all on an unlimited basis. There is a nominal handling charge of 25¢ for each 20 incoming QSLs (or portion thereof).

This service saves you the cost of postage and envelopes, the trouble of looking up addresses for individual mailings. You can QSL new hams not yet in the callbook, your contest QSOs, and any contacts whose address is not available. Plus, you have the assurance that your incoming QSLs forwarded to your correct address, as you address your SASE for their return from the USQS. There is no charge for handling your SASE and forwarding your incoming QSLs. QSLs are always in the best condition when you receive them, as they are spared the wrath of the postmark!

We have many QSLs on file. Check WORLDRADIO monthly for updated list of calls - one could be yours.

REQUIREMENTS:

1) At any time you can send SASEs to be kept on file for us to use to forward your QSLs to you. No charge for SASE handling! Correctly address your SASE (legal size is best) and attach current postage OR we will put SASEs on file for you - *2 for 50¢ or* 4 for $1.00. If you wish, you may specify a certain number of QSLs you wish us to return in your SASE. Otherwise, we will hold for 1 oz. of cards, to give you the most for your money.

(2) Presort your QSLs by call area. With each batch of QSLs, enclose 25¢ for each 20 QSLs or portion thereof. Send as many as often as you wish. Only the call sign of the ham to receive the card is needed. No postage, address, or zip code is necessary on the QSL, only your info to him, and his call.

(3) The service will not accept postage due material. If in doubt, have envelope weighed before you mail it.

(4) The Post Office requests zip codes for delivery. Please use them. Ours is 97042, and remember to put yours on your SASE.

(5) *When requesting someone* to QSL via this service, you may simply refer to us as USQS, we hope to be well-known soon.

(6) Please enclose an SASE with any correspondence requesting an answer, along with a note so we don't file your SASE to be filled later with *QSLs!*

Our address is:

USQS
PO Box 814
Mulino, OR 97042

73,

Laryl Myers - N7BMY

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QRP AMATEUR RADIO CLUB INTERNATIONAL QUESTIONNAIRE

Please take a few minutes and answer the questions below. This is your chance to "sound off" about the direction of club policy. In order to have your voice count, please return this form, or a reasonable facsimile, to the Editor. All survey responses must be postmarked no later than Nov. 15, 1981. Mail the completed form to: Peter N. Spotts, N1ABS
140 Warren St.
Needham, MA 02192

I. Main question: I, being a member in good standing of the QRP ARCI, believe the club's best interests are most effectively served by...

A. Abolishing the 50 watt power limit as a membership requirement ( )

B. Retaining the 50 watt power limit as a membership requirement ( )

II. General interest: the following questions are presented to give you an opportunity to register your opinion on QRP ARCI activities...please number the items in the space provided in the order that you'd like to see priority placed on them.

I would like to see more of the following in the QRP Quarterly:

Technical articles	____
Construction projects	____
Members news	____
Detailed contest results	____
Detailed contest rules	____
International news	____
Editorials	____
Photographs	____
Other _____	____
_____	____

I believe that QRP ARCI should put more emphasis on:

QRP Quarterly	____
Contests	____
Nets	____
Awards	____
International QRP activities	____
Publicity	____
New memberships	____
Renewals	____
Other _____	____
_____	____

III. The president, vice-president, and secretary-treasurer are conducting a search for people willing to serve as officers or board members. If you are interested, please check the appropriate box (one only please), and include your name, call, QRP ARCI membership number, address, and telephone number. CAUTION: YOU WILL BE CONTACTED!

President	( )	Awards chairman	( )
Vice-president	( )	Contest chairman	( )
Secretary-treasurer	( )	Legal officer	( )
Editor	( )	Publicity officer	( )
Assistant editor	( )	Historian	( )
Board member	( )		