

# Bacon Bits

Flying Pigs QRP Club International, W8PIG  
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FPQRP [membership](#) is open to all licensed QRP operators who reside within 12,000 nautical miles of Cincinnati, Ohio.

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### NETS:

| DAY   | TIME  | FREQ  | NCI    |
|-------|-------|-------|--------|
| Sun   | 0100Z | 7.137 | KC8NYW |
| Mon   | 0100Z | 7.044 | WB8ICN |
| Thurs | 0100Z | 7.044 | KE1LA  |

### CLUB FREQS.

|            |            |
|------------|------------|
| 1,814 kHz  | 3,564 kHz  |
| 7,044 kHz  | 10,110 kHz |
| 14,062 kHz | 18,100 kHz |
| 21,064 kHz | 24,910 kHz |
| 28,064 kHz |            |

(All days/times listed are UTC)

ALL FPqrp frequencies are UP 4 kHz  
 from the standard qrp frequencies  
 except for 20 meters.

### WA8THK Introduces "The HeathPIG"



Very Nice Job from Perry WA8THK

### In this issue:

Ramblings: By Brian KB9BVN  
 Big Little Paddles for a Big Little Rig – WB9LPU  
 Whipping Wire is Fun – K3ESE  
 Homebrew Paddles – KC8AON  
 Flying Pig Spotlight – WA8THK  
 WAPS Standings  
 Contest Calender – N2CQ  
 Info about the Flying Pigs:

Page 2  
 Page 2  
 Page 5  
 Page 6  
 Page 7  
 Page 8  
 Page 8  
 Page 9

## Ramblings

Hi gang!!

I can not believe it is August already, we better start getting ready for FDIM in May, it will soon be upon us.

For those of us playing in the Flying Pigs Worked All Piggie States contest, pay particular attention the contest calendar. The Hawaii QRP Party is this month. This will be your best chance at nabbing Dean! Best give him a heads up.

This month we have absolutely fabulous paddles for the KX1 from Richard Meiss WB9LPU, a good article on do it yourself antenna crafting from Lloyd Lachow K3ESE, more goodies from Rick KC8AON, and a bunch of other great stuff.

I hope you enjoy this issue. Also, I am beginning to put the September issue together, I need your input, don't be bashful.

73 de KB9BVN

### Big Little Paddles for a Big Little Rig – WB9LPU

The new Elecraft KX-1 is a little rig with big features, and its growing popularity is well deserved. In a very small box it incorporates (among other things) digital frequency generation and readout, an optional antenna tuner, audio readout of frequency and program menus, and an iambic keyer circuit. It also accepts a tiny iambic paddle that mounts to the front of the unit. This paddle does an adequate job in providing a compact and effective input device, but it does lack the feel of a larger set of paddles. I took this as an opportunity to design some alternative small paddles, and this article describes some of the design process and some of the results. The working name of the paddle(s) is the Kxer, although I am open to suggestions for improvements.

There were a number of criteria that the design had to meet. Among them were:

- It must be small, light, and easy to pack along with the rig.

- It must use only the existing mounting connections on the KX-1
- No modification of the KX-1 should be necessary.
- It should be adjustable to the user's taste - paddle travel, tension, etc.
- It should have the feel of a bigger paddle - crisp action, definite stops at the end of the travel, and no "drag" while the paddle is moving.
- It should also be usable as a "stand-alone" paddle with a conventional cable connection to the rig.
- Construction should be as simple as possible as long as the other goals were met.

I decided to start with an iambic version at first, because that design is the easiest to work out. A single-lever version could come later. The first design problem was how to attach the paddle to the rig. The KXPD1 Elecraft paddle kit uses an offset design, which permits a captive screw to secure it to the rig via a PEM nut that is permanently mounted to the case of the rig. A standard stereo phone plug makes the electrical connections through a socket just below the PEM nut. The Elecraft arrangement allows the paddle to be set up for right- or left-hand use. For mechanical simplicity of the paddle design, I opted for a centered mounting position. This unfortunately ruled out the simple and direct mounting method used by Elecraft, since the paddle mechanism would get in the way of the mounting screw. The drawing below shows one of the solutions to the problem that has been worked out, and the various pictures in the article show other variations. I have finally settled on a simpler approach, which does away with the mounting angle bracket. This is used on the single paddle at the end of the article.

The paddle itself is the iambic type, with the tension provided by opposed magnets mounted on the inside of the paddle arms. The earlier versions used 2-56 screws as pivots for the paddle arms - not very elegant, but it worked pretty well. I have now switched to using 3/16" brass ball-bearings as pivots; the action is very smooth, with little lost motion. The knurled screws on either side set the paddle

travel distance, and they are treated with a little bit of Loctite so that they hold their settings. A brass strip runs down the inside center of each paddle for electrical connections and to hold the magnets in place. Both the fixed and moving contacts are polished brass. The center member holds the stationary contacts and magnets. Thin stranded wires connect each paddle to the proper terminal on the stereo plug, which is mounted at the front of the paddle and held in place with a set screw.

For stand-alone use, the paddle fits on a little brass tripod-like base, as shown in some of the pictures. The base, which has three legs extending outward to provide stability, is drilled out to contain the legs for storage. This allows a wide footprint in use, which makes the paddle pretty stable, especially with the rubber feed at the ends of the legs. Connection to the rig is made with a stereo cable with a female end for the paddle and a male plug for the rig. Stand-alone operation is not as compact as with the paddle attached, but it gives a little more operating flexibility. Some bases with swing-out legs were also made, but the tripod base seems to work the best, since there is no tendency for the legs to loosen up while you are sending.

The single paddle version is still under development - there are about 5 designs on paper, some of them rejected before they were built because a better idea came along. The picture shows one version that works successfully. Though it sounds strange, it is harder to design a good single paddle than an iambic one. The problem is getting a positive center position with a definite "stop" - if it is not positive enough, the paddle will tend to overshoot and give a false output. This is especially true if you are using close spacing at high speeds. The design shown, which uses a spring-type movement that I call a "wobble-toggle", works well at up to about 25 words per minute, which is faster than I can copy anyhow. Another design is in the prototype stage - it can be either spring or magnetic, and it appears to be easier to make and a little less fussy.

While this is not a "how to" article, I would be glad to correspond with anyone who would like to adapt a paddle to the KX-1. I have made many false starts (the rejects are not shown in this article!), and perhaps I can offer some tips. At any rate, this has been a nice design and building challenge. It also

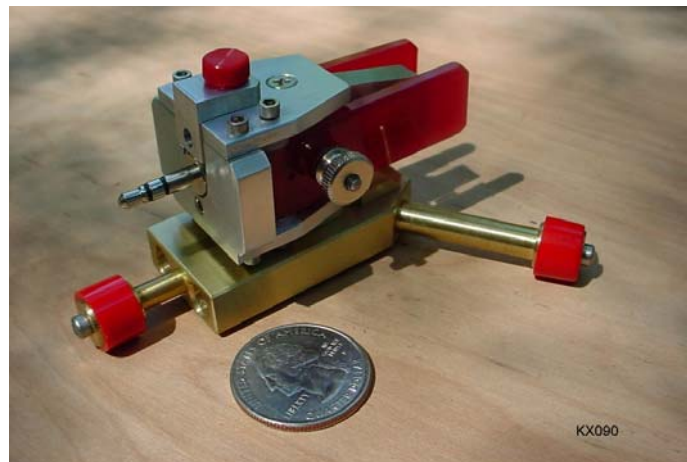
makes using this super little rig even more fun. My hat is off to the folks at Elecraft for another winner.

Richard Meiss WB8LPU (FP#16)  
[wb9lpu@arrl.net](mailto:wb9lpu@arrl.net)

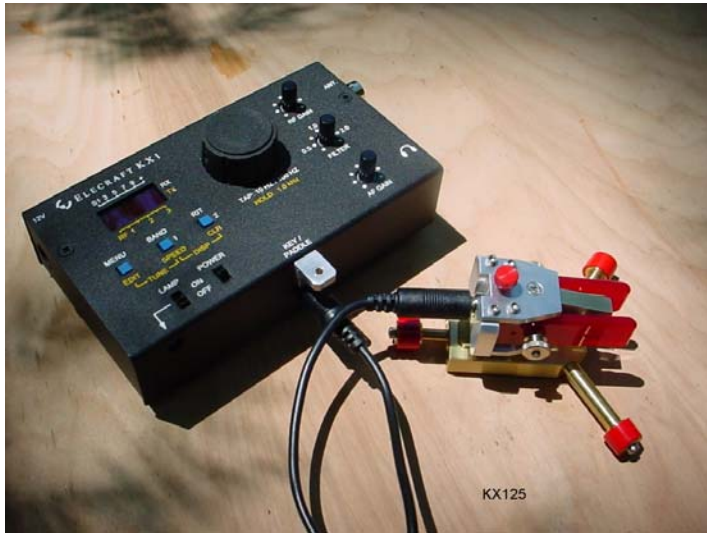
Here are a few pictures for your enjoyment pleasure.



Here is the paddle mounted to the KX-1. The brass contact strip may be seen on the inside of the dot-paddle.

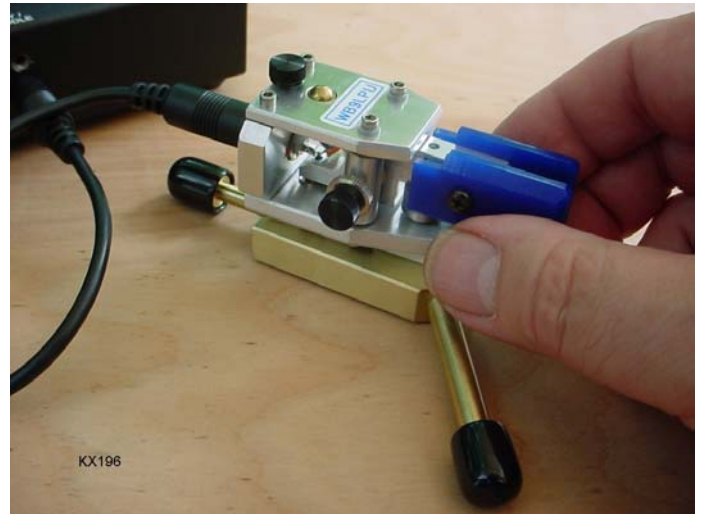


In its stand-alone mode, the tripod legs provide stability, and the brass base provides just enough weight so that the paddle doesn't move (with a moderately light touch). The paddle is raised slightly above the base by using the bottom clamp as a spacer.



Here the paddle is connected to the rig with a stereo cable. This arrangement gives a little bit of flexibility to the operating position.

This version uses a ball-bearing below the paddle arm and a single brass ball above the arm. The "wobble-toggle" spring assembly is just below the front of the fingerpieces. Contact spacing is set by the black knobs, which can be locked. The paddle mounting uses a variation of the bracket method, substituting a 6-32 stud for the bracket and holding it with the upper black knob. A bottom clamp provides stability.



This is the single paddle operating as a "stand-alone". The next single paddle will be a bit smaller and will use a different tensioning mechanism.



This is the paddle removed from the base. The legs have been stowed in the base, where they are held by internal threads.



Here is a group photo of all of the versions tested so far. They all work pretty well, but there are still some refinements that are underway.



The single paddle prototype mounted to the KX-1.

END

## Whipping Wire Is Fun – K3ESE

After getting back into the hobby in 2002, I realized I was just an “appliance op,” so I started to build stuff. I started with some Rock-Mites, and the pinnacle was my multiPIG+. While building that, I dreamed about an antler worthy of the rig...but one that would be a simple wire antler, in keeping with the QRP/homebrew kind of theme...

Well, Diz, W8DIZ, used a “hawgwahr loop,” and he, and others I worked with loops, always had a really good signal. The writeup in the Handbook on the big loop was short but sweet, saying, essentially, that it was a cool radiator, for sure. And – most importantly of all, when considering such an undertaking – I had the space and the trees for support.

My aunt Enna at the time was a longwire. This was gonna be a great change! Very exciting. I walked around the yard, looking up at the trees and planning my next move. How to do this thing? I hadn't a clue. I thought and thought, invited a local ham to come over and look at the trees with me. We hadn't a clue.

Months passed. Every so often, I'd go out back, pace around, looking up. Some hazy ideas began to take shape: I'd send a Dacron rope up as high as I could into each support tree – six trees would be good – I'd get a rounder loop that way. When the rope was up there, I'd bring it down, making a loop. On the loop, I'd put a pulley. Through this pulley, I'd run another rope – the rope that was gonna be attached to the loop itself.

Once all six of these were in place, I'd build the loop, attaching the six support ropes around it, and thread them through the pulleys. Then, I'd run the pulleys up to the top, then pull each support rope up through the pulleys, raising the loop, and I'd hang a weight on the ends, to allow for the trees to move in the wind.

Great idea! I sent my order to The Wireman: I got 1K' of 3/16" black braided Dacron rope, about 400' of thin steel copperclad wahr, the pulleys, some thimbles to thread the loop through and allow for movement, some 300 ohm window line for a feedline, and some insulators.

Then I went outside and stood around, looking up. I realized that my idea was a good one – if the trees had been bare poles, with no branches.

If I had tried to raise this loop up that way, it'd get as far off the ground as the bottom of the bottom branches. I had put up the first support rope, by setting up half a fishing rod behind me, with the bail open on a spinning reel, and shot a one-ounce bass casting sinker up about 50' into the tree nearest my shack. I had to do it from a little way away from the tree, so the weight would clear the branches on the way up, but it came down just as I had intended – straight down next to the tree. I was happy with that, because I planned to raise the antenna up near the tree – duh.

Months passed, but no solution came. In the meantime, I put up a simple 40M dipole, using 450 ohm ladder line, with a ladder-lock, which was good, but not great, at about 45'. After asking for opinions on improving it, I decided to add an 11' piece to each end, making it a 20M EDZ...then it became great. Still is. But the dream of the hawgwahr loop persisted.

After more months, and a lot more pacing around the yard looking up, it finally came to me! I could hoist the loop with the original rope I put up, by using the part that went over the branches to attach the loop, and hauling down on the part that came down next to the tree! Simple and elegant!

I decided to use just four supports, and put up three more ropes, each one shot up there over all the branches, then coming down near the tree. Then I built the loop on the ground...for the feedline, I stripped the two ends of the window line, folded it over an insulator, and secured it with a bolt, some lock washers and a nut, such that there was no stress on the ends that were soldered to the antenna wire itself...it was only on the heavy coated part of the feedline, and I coated the whole affair with Goop. I used four insulators to attach the four ropes to the loop, leaving them free to move around.

I managed to hoist this thing up there by myself, since I could raise it partway and tie off the ropes, then grab the antler wire and horse it up and over the branches it got hung up on. I got it up, decided it

was not as big as the space allowed, lowered it, and added another piece, bringing it from about 280' to 302'.

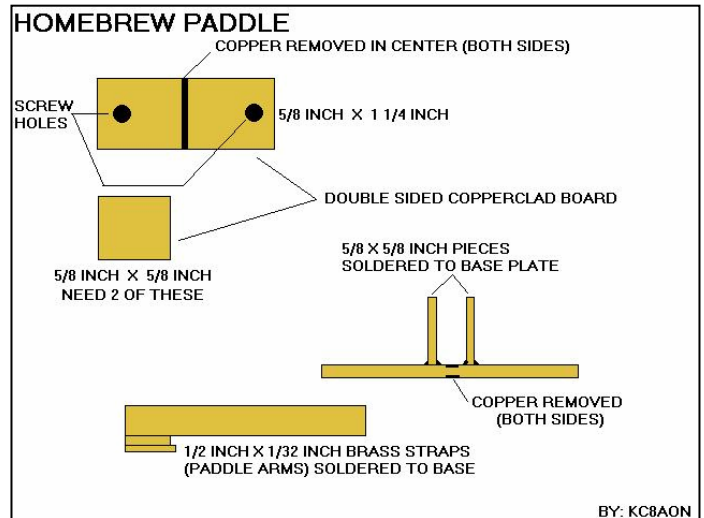
Now it's been up there for about seven months, and it works really well. I used a bungee cord on one end of the EDZ to allow for tree movement in the wind, but with the loop, the fact that the ropes go over a lot of branches on their way up makes for natural movement-absorbers. They've withstood some pretty high winds so far, with no apparent damage. When one of the support ropes breaks, as will surely happen some day, it should be relatively easy to snake a replacement up there. I guess the moral of this story is that if you got the trees, it's easy to put up a great antler!

72 de K3ESE - Lloyd

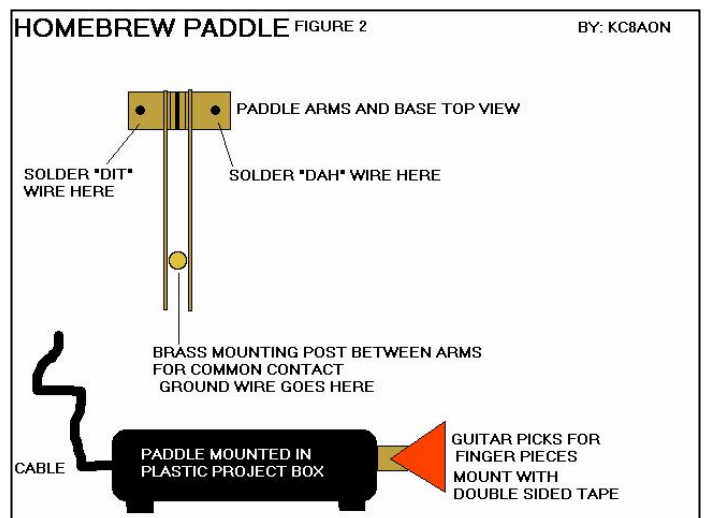
### Homebrew Paddles – KC8AON

To build the paddles, first you will need 3 pieces of double sided copper clad circuit board. One that is 5/8 inch by 1 1/4 inch, and two that are 5/8 inch by 5/8 inch (refer to paddle1.jpg for more details). In the single 5/8" x 1.25" board, remove a thin groove of copper from both the top and bottom sides in the center of the board. This groove will isolate your "DIT" and "DAH" contacts from one another.

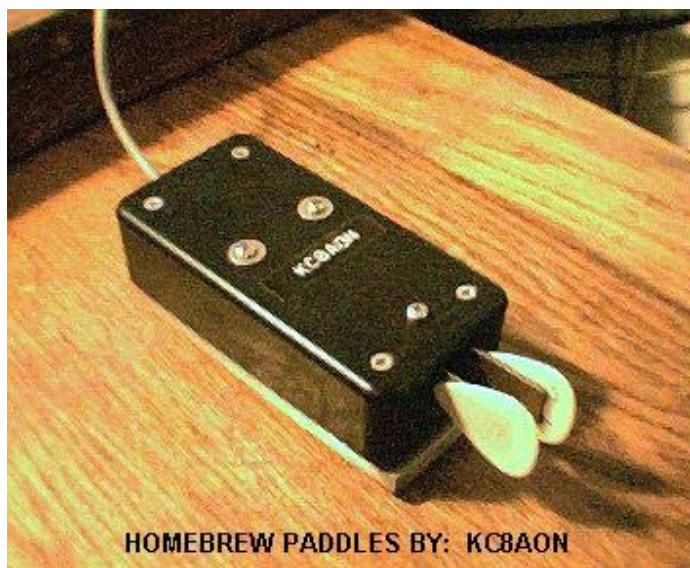
You will also need a brass or stainless steel mounting post with a threaded mounting hole in at least one end to use as a common (ground) contact for your paddle. This is the type of mounting post used to mount a circuit board to a chassis. Now, using a 100 watt soldering gun, solder one of the 5/8" pieces of copper clad board to the 5/8" x 1.25" board, parallel to but about 1/8" from the center groove in the board. Then solder the other 5/8" x 1/8" piece to the base board on the other side of the groove and an equal distance from the groove as the first piece. Next, drill two holes in the base plate to fit 4-40 machine screws for mounting holes for the assembly (again referring to the drawing in paddle1.jpg for details).



Now you will need the paddle arms, for these go to a hobby supply store and buy a 1/2" x 12" x 1/32" brass strap. Then cut two equal pieces of this strap for the paddle arms. Cut them to a length to suit yourself, but be sure they are long enough to extend out of the plastic project box you will be mounting the paddle in. Make sure they are long enough to mount your guitar pick finger pieces on too! Now solder the brass arms to the upright pieces paddle base, making sure to keep them in line with each other. In fact, be sure when soldering up the base that you keep a 90 degree angle between all pieces. Next, prepare the project box for mounting the paddle. Cut a square notch in one end big enough for the paddle arms to protrude from, and then drill the lid of the box to match the mounting holes in the paddle base and the mount the base with the arms in position to protrude through the notch in the box when you put the lid on.



Next drill a hole between the arms in the box lid for mounting the brass mounting post that will be your ground contact and then mount the post. Now, drill a hole in the end of the box opposite the arms and route a three conductor cable through it, then solder one each to the paddle arms and the ground contact (refer to paddle2.jpg for more detail). Install a plug on the other end of the cable to match the jack on your keyer paying attention to which side goes to the "DIT" and "DAH" contacts.



Now install some rubber feet on the bottom of the box, and the guitar pick finger pieces to the paddle arms using double sided mounting tape and you're ready to "pound brass"!!!!

### Paddle parts list:

Copperclad circuit board (enough to make the three pieces in the instructions)

- 1 - brass mounting post with threaded mounting hole and matching screw
  - 2 - guitar picks - size, color, and shape to suit personal preference (you can use small stick on rubber feet for finger pieces)
  - 1 - 1/2" x 12" x 1/32" brass strap
  - 1 - plastic project box - size to personal preference
  - 1 - 3 conductor cable - length to suit needs
  - 2 - 4-40 machine screws and nuts with lockwashers
  - 1 - small roll of double sided mounting tape
  - 4 - small rubber feet
  - 1 - 3 conductor plug to match your keyer jack
- Misc: rosin core solder, 100 watt soldering gun, alligator clips (to use as clamps to hold pieces

together while soldering), drill and drill bits, screwdriver, pliers and enough imagination to picture how this is all put together and enough gumption to do it! "HAPPY BUILDING & 73 de: KC8AON"

### The Flying Pig Spotlight – ON WA8THK

Every month we will try to showcase a particular Flying Pig member. If you'd like to tell us a bit about yourself, send me any info you want published, at least one picture of YOU and you could end up being, the Spotlitged Pig! This month our spotlight shines brightly on Perry Baker.



This is his shack. Perry is a sick individual. I have never seen a shack this nicely arranged. Perry, you need some professional help.

Seriously, Perry is a great guy and a great ham, he is currently married and is the proud papa of two stunning daughters, Amy and Brigette. They live in the frozen northern reaches of Gaines Michigan, they like the taste of Polar Bear and it's a good thing, they're all over the place. His wife, Machiko is known throughout the north as the best Polar Bear cook ever. Remember this next Field Day!

Perry has a very nice ranch home on about 2 acres, he has the space crammed full of antennas and has three towers. When Perry isn't out hunting Polar Bears he loves to build QRP projects. His HeathPIG is a genuine treasure to say the least. He also loves to pack as much amateur radio gear into his truck, the space will allow.

Perry was nice enough to include of pictures of his projects, I present them here for you to see and be envious of. Enjoy! Thanks a million Perry!



**Perry goes mobile in STYLE**



**Homebrew Receiver from WA8THK FP #582**

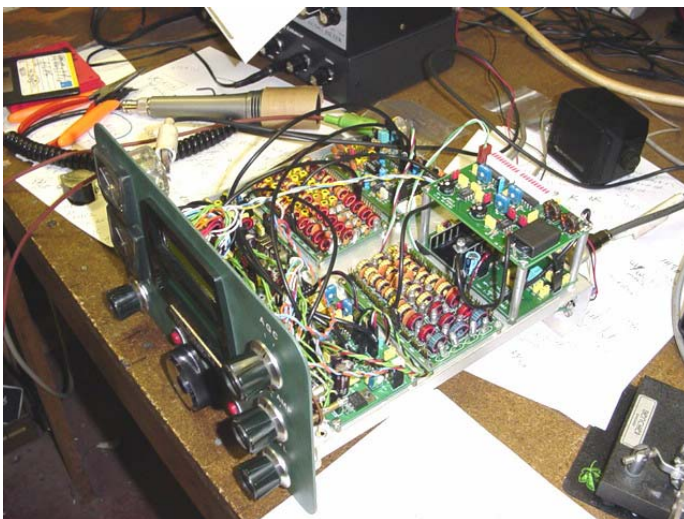
**WAPS Contest Update**

Currently we have 42 Flying Pigs that have posted their ongoing results to the website. (<http://www.fpqr.com>)



**WA8THK Mobile and Ready**

| Rank | #  | Call   | Rank | # | Call   |
|------|----|--------|------|---|--------|
| 1    | 46 | N7MFB  | 22   | 9 | W2LJ   |
| 2    | 34 | KW4JS  | 23   | 9 | WB8ICN |
| 3    | 34 | N0JRN  | 24   | 8 | AC5JH  |
| 4    | 31 | K1EV   | 25   | 8 | WB1HGA |
| 5    | 30 | W0EB   | 26   | 7 | NN1F   |
| 6    | 28 | WB8YYY | 27   | 6 | VE3VG  |
| 7    | 26 | N0OR   | 28   | 5 | KJ0C   |
| 8    | 23 | KB9BVN | 29   | 5 | N0DT   |
| 9    | 23 | KI0II  | 30   | 5 | N0NBD  |
| 10   | 22 | W8DIZ  | 31   | 3 | WB8ABE |
| 11   | 21 | W7ILW  | 32   | 3 | WN4M   |
| 12   | 20 | KC8AON | 33   | 2 | N0UB   |
| 13   | 16 | AF4PS  | 34   | 2 | N8WS   |
| 14   | 16 | KC9EUH | 35   | 2 | W4GNS  |
| 15   | 15 | KC5GXL | 36   | 1 | K3ESE  |
| 16   | 15 | KQ9L   | 37   | 1 | K4FB   |
| 17   | 13 | KG4FSN | 38   | 1 | KC5WA  |
| 18   | 12 | K6XR   | 39   | 1 | KO1M   |
| 19   | 12 | N3JV   | 40   | 1 | NE4LS  |
| 20   | 12 | W5FRG  | 41   | 1 | W0MPR  |
| 21   | 10 | WN1B   | 42   | 1 | WB0WAO |



**Perry's Multipig Plus #11**

**Upcoming QRP Contests – TNX to Ken N2CQ**

**N2CQ QRP CONTEST CALENDAR  
Aug 2004**

Summer FOX Hunt - CW:  
Every Friday through August 20 (UTC) 0100z to 0300z



(9 PM - 11 PM EDT Thurs evening US/Canada)  
Info: <http://www.cqc.org/fox/>

Truffle Hunt - CW:  
30 min before CW Fox hunt.  
Info: <http://fpqrp.com/struffle.html>

Summer SSB Fox Hunt:  
Every Friday through August 20 (UTC) 0000z to 0100z  
(8 PM - 9 PM EDT Thurs evening US/Canada)  
Info: <http://www.zianet.com/k5di/ssbfox.htm>

Adventure Radio Spartan Sprint (CW) \*\*\* QRP CONTEST!  
\*\*\*  
Aug 3, 0100z to 0300z (Monday Evenings US/Can local time)  
Rules: <http://www.arsqrp.com/>

Ten-Ten Summer SSB Contest ... QRP Category  
Aug 7, 0001z to Aug 8, 2359z  
Rules: <http://www.ten-ten.org/calendar.html>

ARRL UHF Contest ... Low Power Category  
Aug 7, 1800z to Aug 8, 1800z  
Rules: <http://www.arrl.org/contests/rules/2004/uhf.html>

North American QSO Party (CW) ... 100W Max. (/QRP noted on entry)  
Aug 7, 1800z to Aug 8, 0600z  
Rules: <http://www.ncjweb.com/naqprules.php>

Worked All Europe DX Contest (CW) ... 100W category  
Aug 14, 0000z to Aug 15, 2359z  
Rules: <http://www.darc.de/referate/dx/xedcwr.htm>

Maryland/DC QSO Party (SSB/CW) ... QRP Category  
Aug 14, 1600z to Aug 15, 0400z  
Aug 15, 1600z to Aug 15, 2359z  
Rules: <http://www.w3cwc.org>

**RUN FOR THE BACON (CW) \*\*\* QRP CONTEST! \*\*\***  
**Aug 16, 0100z to 0300z**  
Rules: <http://fpqrp.com/fpqrprun.html>

SARTG WW RTTY Contest ... Low Power Category  
Aug 21, 0000z to 0800z  
Aug 21, 1600z to 2400z  
Aug 22, 0800z to 1600z  
Rules: <http://www.sartg.com/contest/wwrules.htm>

NJ QSO Party (CW/SSB)  
Aug 21, 2000z to Aug 22, 0700z  
Aug 22, 1300z to Aug 23, 0200z  
Rules: <http://www.qsl.net/w2rj/>

The Colorado QRP Club Summer VHF/UHF QSO Party \*\*\*  
QRP Contest \*\*\*  
Aug 22, 1600z to 2200z (Sunday North America local time)  
Rules: <http://www.cqc.org/contests/summer04.htm>

**Hawaii QSO Party (CW/SSB/Digital) ... QRP Category**  
**Aug 28, 0700z to Aug 29, 2200z**  
Rules: [http://www.karc.us/hi\\_qso\\_party.html](http://www.karc.us/hi_qso_party.html)

TOEC WW Grid Contest (CW) ... Low Power category  
Aug 28, 1200z to Aug 29, 1200z  
Rules: <http://www.qsl.net/toec/contest.htm>

Ohio QSO Party (CW/SSB) ... QRP Category  
Aug 28, 1600z to Aug 29, 0400z  
Rules: <http://www.oqp.us/>

Thanks to SM3CER, WA7BNM, N0AX(ARRL), WB3AAL and others for assistance in compiling this calendar.

Please forward the contest info you sponsor to [N2CQ@ARRL.NET](mailto:N2CQ@ARRL.NET) and we will post it and give it more publicity. Anyone may use this "N2CQ QRP Contest Calendar" for your website, newsletter, e-mail list or other media as you choose.

(Include a credit to the source of this material of course.)  
72 de

Ken Newman - N2CQ  
[N2CQ@ARRL.NET](mailto:N2CQ@ARRL.NET)  
<http://www.amqrp.org/contesting/contesting.html>  
<http://www.n3epa.org/Pages/Contest/contest.htm>

## About the Flying Pigs QRP Club International

### OUR MISSION:

- 1: Have Fun.
- 2: No rules.
- 3: Have a group of Friendly Hams who enjoy Amateur Radio, and sharing their skills with their fellow Hams.

### CLUB EMAIL POLICY:

These are not rules, just common sense.  
Club email is not moderated, as we are not a stuffy group. You can send off topic messages about most subjects, but please keep it clean and in good taste. We do like good-natured ribbing and joking with each other, but we will not tolerate flaming other members or spamming the group.  
We will remove offenders who abuse our open policy.

### CLUB WEB PAGE:

The club web page is our forum for sharing projects, and information about us. You are encouraged to submit your ideas and projects to be added to the web page.

### PROBLEM REPORTING:

If you are having problems with email, the web page, or a fellow club member, please report this to either:  
Diz, W8DIZ at [w8diz@cinci.rr.com](mailto:w8diz@cinci.rr.com)  
Rick, WB6JBM at [ripowell@mpna.com](mailto:ripowell@mpna.com)  
Dan, N8IE at [n8ie@who.rr.com](mailto:n8ie@who.rr.com)  
We welcome all to join the Flying Pigs QRP Club, and we hope you have fun! Ω