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# Low Power DX Contesting at N4TZ/9

By Terry Zivney, N4TZ/9

Finally, some one made the mistake about asking me to talk about my ham radio activities! It doesn't happen all that often; after all, low power contesters as a group get very little respect. For example, the organizers of WRTC-2010 have ruled that the efforts of low power contesters count less than those of the person making the coffee for a Multi-Single or Multi-Two entry!

I have included a slightly-out-of-date photo of my operating position. I would like to thank the SMC for their sponsorship of plaques for low power operating. I would especially like to recognize Mike Tessmer, K9NW, who sponsored the first plaques I won before the SMC started their sponsorship. I have tried to repay the favor by not only contributing to the SMC treasury but also by sponsoring two plaques each year for the top USA score in the WPX SSB and CW contests each year, and cosponsoring with N9RV a plaque in the CQWW CW for top European 160 meter score.

Sunspots definitely help here in the Midwest. Not only are more bands available for more hours and more QSOs, but the advantages that other locations have are lessened. 2002 was the year that most call area single operator records were set in the ARRL DX con-

(Continued on page 6)

# **Upcoming Contests**

NCCC Sprint	Every Thu.	0330Z - 0400Z
ARRL Inter. DX SSB	Mar 1-2	0000Z - 2400Z
NA Sprint RTTY	Mar 9	0000Z - 0400Z,
Wisconsin QP	Mar 9-10	1800Z - 0100Z
CQ WW WPX SSB	Mar 29-30	0000Z - 2359Z
Missouri QP	Apr 5	1800Z - 0500Z
	Apr 6	1800Z - 2400Z
Indiana QP	May 3-4	1600Z - 0400Z
CQ WW WPX CW	May 24-25	0000Z - 2400Z
ARRL June VHF QP	Jun 14-16	1800Z - 0300Z
ARRL Field Day	Jun 28-29	1800Z - 2100Z
IARU HF Champ	Jul 12-13	1200Z - 1200Z
CQ Worldwide VHF	Jul 19-20	1800Z - 2100Z
North American QP RTTY	Jul 19-20	1800Z - 0600Z

# 2008 ARRL CW @ K9SD

By Chuck Schneebeli, KI9A

This is was my 10th year operating up at Sam's, for the ARRL CW, and, again, was a blast. It is a chance for me to operate a "real" station, or, rather, one with real antennas. And, that sure is the way to go. Add to it a great bunch of guys that talk about guns, politics, religion, radio, and watch the Daytona 500, and you have a recipe for a nice weekend.

Sam has a great performing station, with a couple of ICOM 781's, Alpha amps, 2 towers that sport a 3 stack of KT34Xa's @ 40/80/120 feet, 2 ele 40 @ 140', long 5 ele 20 monobander @ 120', a pair of long 5 ele 15 mono banders @ 70' & 130', a loaded 120' tower for 160, and a FB working 4 square sloping 1/2w dipole array for 80. This is just a totally different DX world than I have at home, with a low tribander, wires & vertical.

(Continued on page 5)

The Black Hole page 1

### The Black Hole



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Membership in **The Society of Midwest Contesters** is open to all persons with a bonafied interest in amateur radio contesting. The club doesn't collect annual dues, but instead funds everything through member donations. For more information contact one of the following officers:

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As one of the top contest clubs in the nation, we continue to sponsor plaques for a number of major contests including Sweepstakes, ARRL DX, CQWW, and CQWPX, as well as make monetary donations in the interest of promoting radio sporting.

A few years ago we decided to eliminate the formal dues of \$10 per year, and instead maintain funds through member donations. We encourage all members to consider making an annual donation to the club. Your generous donations allow us to continue to expand our support of radio sporting.

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### **SMC Stuff**

To get your SMC stuff, see the last page of the newsletter or visit the SMC website, http://w9smc.com/merchandise.htm



## **VHF** Column

By Kevin Kaufold , W9GKA

"Developments around the Circle"

This month I would like to show some pictures of SMC stations. The first two is form N9FN, who has been working on a wonderful panel van. The first picture shows the





inside lay-out of the van, ready for contesting. Note the

long tube in the back of the first picture. That turns out to be a shaft for a 40 foot pole. See the outside of the same van, below. Just imagine what this station can become with VHF antennas on it!



Craig, K9CT has put together a mega station on VHF in a very short time, with KW's on 6-432 as well as radios and antennas on 902 and 1.2G. The following antenna lay-out is most impressive. Note the unique way Craig can rotate the 2 meter array (xxx's!) towards the moon while still maintaining terrestrial antennas for the higher bands. Very versatile.



Marshall, W9RVG, is a real treat to work in EM57. He has a good signal, and is usually in there most contests. Marshall now has 4 towers at 80 feet, and a 5th at 50 feet. Marshall says that he will have rotor problems fixed this spring, hopefully. And we were just getting used to his wayward antenna headings! It was fun to work him 45 degrees off of alignment.

(Continued on page 4)



Gene, N9TF, really does a lot with a modest set-up. He has HF, 6-432 all on one compact mast. I know he gets out with it, as I have worked Gene on 2 and above.



Southern Illinois just went through a very bad ice storm earlier in February. Both Brad, W9FX, and W9RVG re-

ports damage to their systems (major damage at W9FX; more modest at RVG). Below is Marshall's 6-meter array with the ice build-up. Hopefully the mast did not snap off.

Keep the pictures coming!

In other news, Bob, K2DRH, again won the national title in the SOLP in September. He also set a Central Division record (it could also be a national record, but I do not track those). Most encouraging is our log numbers – 18 in all – which is the highest log count for any SMC club entry in September. I think this reflects our build-up of abilities on VHF. Also, congratulations to the Badgers to our north for having the highest log count of any club in the nation in September.

Also note that the Spring Sprints are coming up in April. John, K9JK, is once again co-hosting the event. Please plan on participating in one or more of the weekly runs.



# **Contest University**

#### Dayton 2008

Thursday, May 15, 2008 Crowne Plaza Hotel, Dayton OH Sign up now! http://www.contestuniversity.com/



#### (Continued from page 1)

I showed up Friday afternoon, got a few items ready, and found the top 40m yagi was stuck due south. The 50' 40m yagi was stuck southwest. Not good, as 95% of 40 meter Q's would be with EU. We did OK Friday night, working about 150 QSO's on 40, and 60 or so mults. Early Saturday AM, K0RAY was drafted to climb the tower, and attempt to repair the rotor. No luck, so, he turned the antenna NE, and we figured its better than pointing at Louisiana. But, not so good for the JA run we normally get there, and we missed some easy, juicy mults in Asia. Friday night on 80/160 was tough going, dealing with thunderstorm QRN, from a system 400 miles south. Almost sounded like mid-summer on 80/160.



Sam, K9SD (l), Chuck, KI9A, at the radio

20 opened to EU about 5 AM, and slowed down around noon, leaving just the big gun EU's to be heard. I had hoped it would last pretty much until 40 opened to EU, so, we scoured 15 for the little that was there, no EU or Asia heard. We worked the 1st EU on 40 at 2:30 PM, and did well there Saturday evening, ending up with 275 Q's, and 70 mults. Total on 40 was 292Q/84 mults. Could have been 400+ Q's. and at least 90-95 mults if the rotor would-



KORAY took time out on Saturday to turn the 40mtr yagis towards Europe.

n't have croaked on us. 80 was just great in to EU, and Sam's array was plowing thru the pileups on 1st call, and running EU every once in awhile. Same with 160.

Sunday morning began great into EU again around our sunrise,



Ralph, K9ZO, running em.

and just stayed producing well after noon, with our last EU logged at 3 PM, just in time for the JA's to start rolling in. We even worked 2 EU on 15, and one lone JA. K9ZO finished the contest off by snagging some really neat mults on 20 & 40. For a DX contest, at the bottom of the cycle, in the Black Hole, I just had a complete blast, and, guys, that is what radio, and especially contesting is all about. Well, that, and the food we usually have. (Ralph, next year, you will have a White Castle crave case waiting for you)

Saturday afternoon, as usual, we had visitors. K9QQ & W9GKA stopped by, and I had a chance to present to them a few ideas I have about getting activity in the club moving ahead again. I'm Kevin will present these ideas to the board, and then to the membership.

So, now, it's time to get a couple rotors repaired, and get ready for the IARU up at Sam's.

BAND	QSO	MULT
160	48	38
80	208	73
40	292	84
20	819	107
15	85	47
10	8	4



#### (Continued from page 1)

test and that was also the year I won the Rochester DX Association K2FR Memorial Plaque for best combined CW/Phone low power score in the ARRL DX contests. The 2002-2004 seasons found me generally in the top 5 low power USA in the CQWW and CQ WPX contests, although I did take a break from the low power grind and "won" the Single Operator Assisted (High Power) WPX for the USA in 2003.

The design of a contest station and its operation are clearly interrelated. Thus, I will describe why my station is constructed the way it is and how that impacts its operation. Like most people, money and time for ham radio are in relatively short supply. Because of family responsibilities, I decided to concentrate my operating to a few times a year. My wife hated the "one-ringers" in the middle of the night in my earlier DXing phase.

#### Antennas

Here in Middletown, Indiana, I started with 120' of Rohn 45 which I brought with me from Wisconsin where it held 5 elements on 20 with the elements from a Cushcraft 40-2CD interlaced on the 48' boom. I installed the tower in 1995 without giving thought to what to do next. This of course was a big, but not uncommon, mistake. Fortunately, Pat, N9RV, was around to take my old W0MLY prop pitch rotor and the stub mast it turned off of my hands and point me toward an available 24' long mast for which I only needed to purchase a suitable rotator.

My first "all band" system consisted of the 5el 20 / 2el Cushcraft 40 on the 48' boom at 121' and 5el interlaced 10 and 15 yagis on a 38' boom at 130', turned by an M2 Orion. For 80 meters I hung a lazy vee from the top of the tower and installed the YCCC Double L for 160. The 10/15 beam was designed to have a 4' element spacing in the middle so that similar ones could be turned with swinging gate side arms in the future. At the peak of the sunspots in 1999 and 2000 this system of one antenna per band provided a lot of fun with low power but had some notable weaknesses.

First, all the directional antennas had to be pointed in the same direction. This was not so much of a problem with one radio (initially, a Ten-Tec Corsair II), but became more of a problem when I acquired a second radio, an OMNI VI+ because now two bands might be open in different directions. I had constructed three more 10/15 duobanders and started fixing them on the side of the tower to clear some room on the ground. Before I purchased my first Tailtwister for turning a sidearm I acquired a new TIC ring rotor at Dayton. I put it up at 99' and now had two rotating 10/15 antennas which seemed like a major improvement. Eventually I progressed to actually being able to point and feed all four 10/15 antennas, which mainly seemed to help

with running. When the sunspots permit running JAs from here the stack definitely helped on both 10 and 15.

Second, there was no good plan for improving the low band signals. As more antennas were added to the tower it became more difficult to keep wire antennas for the low bands. A band-by-band breakdown of high scorers, both high and low power, showed that even during the high sunspot years those higher up the lists had better totals on the low bands than those further down the lists.

At my current QTH, my house sits in the middle of a very heavily wooded lot so I purchased the adjacent hay field where my single 120' high tower is erected. The remainder of the field is rented out to pay the taxes and so I don't have to mow the hay, but that means I can't use it from April through September. After the last mowing of the hay I erect a four square for 80 meters. The elements are 48' of 2" OD x .125" wall aluminum tubing with 13' fiberglass quad spreaders and small top hats to resonate the elements without inductive loading. Each element is guyed 4 ways at 24' and 44'. There are 24 60' radials at the base of each element. The R measures at 37-38 ohms at the 3.75MHz resonant frequency with this ground system. The array is set up for minimum dumped power at 3.75MHz and a small inductor is used at the base of each element to tune the array for CW from November through February, when it reverts to SSB mode for the March ARRL DX fone contest. I generally remove the elements and the radials before the WPX contest. I can erect or remove the array in one full weekend by myself.

My antenna for 160 has evolved over the years. The first year I operated all-band from this QTH, I tried the "Double-L" antenna written up on the YCCC site. I struggled offand-on for hours to work K4VX on the far side of the SMC circle for the important zone 4 160m multiplier in the 2000 CQWW DX contest! This was my first, but not last, experience with finding that antennas that work great in morefavored locations might not be so effective here in the midwest. [I'll refrain from using the phrase "Black Hole" because I know from personal experience that here on the southeastern edge of the SMC circle I get better propagation than I did when I lived in Wisconsin. And then readers won't confuse me with the misguided soul in Alabama who likes to refer to himself as living in the Black Hole!]

My next 160 meter antenna was the AKI special described in ON4UN's book. I used 48' of 2" tubing to hold a 26' long fiberglass quad spreader left over from an earlier era. Wire was run from the top of the tubing along the spreader arm and then down and out to a tree. I use 30 of the 60' radials under my 160m verticals and find that does a pretty good job here. However, the fiberglass is under a fair amount of stress from the wire running to the anchor point

(Continued on page 7)

#### (Continued from page 6)

and it will invariably break if we get serious icing or a heavy wind.

The next 160 meter antenna was an inverted L using the same materials as the AKI special, but using a tag line at the end of the wire over the tower guy wires to pull the wire mostly horizontal at about 75'. This worked better as the radiation resistance was higher and the bandwidth better, but it had the same problem with wind and ice.

The ultimate solution to the 160 meter antenna here was to hang a pulley at the top of the tower and run a 500' loop of black poly rope from Farmtek through a second pulley at an anchor in the field. One end of a 135' piece of number 12 stranded house wire is tied to the rope and the rope is pulled up like an old-fashioned clothesline. About halfway down the wire, it is attached again to the rope and the rope is then pulled until the bottom end of the wire just touches the ground. The top end of the antenna is about 110' off the ground and the bottom half is fully vertical. This antenna has a pretty high radiation resistance and pretty good SWR bandwidth.

The reason I'm dwelling on the 160 meter antenna evolution is that it plays an important part in my contesting success. The single band entrant probably chooses the band for which he has the best antenna system, and indeed may focus on developing a "killer antenna system" for that band. For an all-band entry you have to pick up multiplier and/or QSO points on all bands permitted by the contest rules. To be competitive, you need to have competitive antennas on every band. To maximize competitiveness, you need to allocate resources so that the return to time and money is the same for the last multiplier and QSO on each band. [This is a general economic principle which I keep telling myself I should write an article about, or make a Dayton presentation.]

In October 2004, late fall rains delayed the harvesting on my antenna field where I erect my 80m 4 square and 160 vertical each fall. So, I was using just one of my 80m verticals in the garden and a 10 meter high 160m vertical in the woods, on the wrong side of the tower from the DX in the CQWW SSB weekend. I had to take a lot longer to work the guys I normally get on a few calls on 80 and 160. Later A/B tests showed the 160 shorty vertical (probably similar to the Cushcraft MA160V) was about 12dB down from the full-sized wire I installed when the hay was finally mowed. Of course the single vertical on 80 was about 5dB down from the 4 square. I placed second in the USA in this contest. The regular antennas were back in action by November, but I placed third in the US this time.

The January 2005 ice storm that took out N9RV's and my antennas resulted in another opportunity to evaluate the benefits of different antennas. First, after jettisoning the

broken antennas on the top half of the tower to prevent further damage, I was able to operated the February and March 2005 ARRL DX contests with my 20/40 duobander at 62' and the 10/15 duobander at 45'. The 160 antenna was replaced with a 48' high inverted L. The 80m 4 square was intact. Compared with other top scorers my scores were down maybe 10 percent more than I would have expected with the full complement of antennas.

The results of these two unplanned "experimental opportunities" show that while the bigger antennas clearly help, the main thing is to be above some threshold level in signal strength. For bands on which you don't expect to run people, that threshold is considerably lower than it needs to be if you want to run. If you can't get an answer when no one else is calling, then you are too weak and need to do something about it .

These results also are broadly consistent with my experience in the Assisted category in the 2003 SSB WPX contest. Quoting from my 3830 writeup: "On 40m, I found that it was often difficult to get the DX's attention barefoot. The 500 watt amp usually did the job, but a couple of times I switched over to the 1500 watt amp. Always

got through the next call then." That is, 6dB is noticeable, 12dB is meaningful.

My current antenna setup is as follows:

- 160m full sized "nearly vertical" wire, 30 radials
- 80m full sized four square, 24 radials each element
- 40m full sized 3 element 48' boom at 121' Cushcraft elements on 20m boom at 62'
- 20m 5 element yagi on 48' boom at 130' 5 element yagi on 48' boom at 62' (TIC ring)
- 15m 5 element yagis on 26' boom at 99', 75', 45' (TIC rings)
- 10m 5 element yagis interlaced on 15m yagis

The TIC rings are great, never had any real problem with them. The M2 Orion has been replaced with a K7NV prop pitch, another great rotor. The rings let the elements be closer together on the boom than a swinging gate side arm. By rearranging the elements, I get virtually the same performance on the 26' boom 10/15 that I had from the 38' boom. I feel the savings in wind loading plus dropping from 4 down to 3 of them almost pays for the extra wind load of the full-sized 40.

It has been my experience that the highest antenna is almost (Continued on page 8)

#### (Continued from page 7)

always better than the lowest antenna, even into the Caribbean, on all bands. In the November CQWW, I could hear and work (a few) people on the 99' high antenna on 10, but didn't hear a peep on the 45'. When conditions are good, it is great to be able to turn antennas in different directions and leave them parked, but when conditions are punk, I find that pointing the higher antenna often seems to make a big difference.

#### Operating

I have not yet figured out what our comparative advantage is here in the midwest. For example, we all know that those on the east cost have an opportunity to work Europeans before any band opens here and thus stake out a run frequency. Similarly, those in the southern tier of states expect much better openings to both Europe and Japan on the higher bands especially when solar activity is below maximum levels. Those on the west coast have the opportunity to work many exotic Asian multipliers and run hordes of weak JAs that are unavailable to the rest of us. Finally, VEs have a real plus on exclusive fone frequencies in the ARRL DX fone contest. All of those locations have been rewarded with USA winning low power entries in the twenty first century. In spite of all this, ACOW managed to take home the US/VE low power bacon from ARRL DX fone contest at the peak of the solar cycle in 2000. His line score showed that his large multiplier total on 160 was his margin of victory in the upset and it has provided an inspiration to me.

All operators face a tradeoff between QSOs and multipliers. The general idea is that you should consider how long you should call an elusive multiplier and compare that with how many contacts you are likely to miss in that time interval while calling and calling the rare one. Having a second radio to keep trying to work the multiplier while going about your main business of finding new QSOs is very valuable. I generally keep entering the call of each station I tune past and hit the space bar to enter it into TRLog's bandmap to make it easier on those repeated scans when the DX doesn't sign his call every time. With low power it is difficult on Sunday afternoon or late Saturday night to try to keep CQing with very few responses and also hard to tune once more through a picked-over band for those multipliers you have missed. The second radio is invaluable here. Since there will be many hours here in the heartland where your low powered CQs will go unanswered, having two radios makes possible two radio S&P. This is quite useful, especially when dealing with a pileup where the DX refuses to identify himself or you can't hear the ID very well through all the QRN on 160. Camp out on that frequency with one radio while continuing on your merry way S&Ping on another band with the second radio.

Accuracy should be of extra concern to the low power spe-

cialist. That VU2 or VK6 may be the only one you work, and losing a double multiplier will be much more costly to you than to the high power guy who works lots of these and is only going to lose the QSO points.

Speaking of multipliers, I have heard it said that many multipliers will result from running. Well, my experience suggests otherwise (except in the WPX contest where darn near every contact is a multiplier). Looking back at the years where I ran lots of stations on 10 meters, I find that more than 90 percent of the multipliers on that band were still from search and pounce. Again, this suggests that maintaining a continuous S&P activity is very important, which of course can be done with the second radio.

While all multipliers may be created equal, not all multipliers are equally worth chasing. It is great fun to bust a pileup, but this can be a costly practice for a low-power entrant. If there is a pileup, it may be ineffective to just drop your call in on the second radio. That may work for W9RE or K5ZD on 160, but I may have to call for several minutes to hook up. That's a lot of disruption on the CQing radio. The DX's call will be there in your bandmap after the first attempt, and you can tune on until you have a group of such fellows. Then, change your attention to trying to crack the pileups when you can better concentrate on the timing needed instead of monitoring your other radio for responses.

Finally, I recommend that you document everything. I'm pretty bad about such things, but even a little is better than nothing. If something occurs to you during a contest, enter it into your log as a comment (control-N in TRLog). This places the thought into context when you try to figure it out later. Then, within a day or two after the contest, write a narrative summary and put it in your comments (soapbox) with your Cabrillo log. Again, this helps to put things into perspective later. When the final results are published you can refer back to your comments to see what you might have done differently for the next running of that contest.

TRLog allows you to save some data that may be useful for later analysis, including the specific frequency (.833), which radio you used for a specific QSO (left or right), and whether the QSO resulted from a CQ or S&P. One thing I have noticed as a result of this data, is that I tend to CQ way to high in frequency compared with my competitors. I can't seem to find holes at the bottom of the band, but I believe that many casual operators start at the bottom of the band and give up long before they find me. I don't have a solution, but to try to remind myself that some other little pistol (albeit of the east coast branch of the family) found a good location so I should try, too. This past ARRL DX CW I was pretty high up the band, but still lower than I had been in some earlier contests and my 20 meter QSO total was quite a bit better.

(Continued on page 9)

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(Continued from page 8)

#### Inside the Shack

Having a second radio will be very beneficial for increasing one's multiplier totals. Because a low power signal by definition is at least 12 dB below a high power signal from the same location, some things might be done differently by a LP op. For example, although I own a pair of Dunestar switchable band pass filters, I never use them. In HP, the loss through the filters is easily made up by the linear amplifier following the filters, but in LP each watt lost is lost forever. With Ten-Tec radios I have never had a problem of receiver overloading without bandpass filters, and find that simple stubs at the sixpack switch take care of any remaining problems on harmonics with very little loss. In fact, in my November/December 2004 NCJ article I show how stack switching can be arranged to automatically provide the benefits of stubs. As explained by W2VJN, having two sets of stubs spaced some distance apart generally gives excellent harmonic rejection. Thus, stubs at the band selection site (your sixpack) in conjunction with the Invisible Stubs at the stack switching location are likely to be all anyone needs with decent radios.



Terry, inside his shack with a few plaques.

If you are planning on winning, you will need to stay in the chair. Sleep can be pretty dangerous, so idiot proofing things is pretty important. My Anti-Murphy box in the November/December 2004 NCJ was written in response to an incident I had where I managed to put both radios on the same band. I bandswitch antennas using the parallel ports of my computer. This requires two parallel ports since I have two radios. TRLog does a great job implementing this feature. The parallel ports drive TopTen Band Decoders (at the time I put this feature in W9XT had not come out with his very low cost alternative). By having the computer control the band decoders, I can swap out rigs without having to wire up new interface cables.

Even low power contesters need to be loud. For SSB, this means you need good speech processing. For people of a

certain age, the Signal/One CX7A is the standard of comparison. True RF clipping, well designed, is very valuable. Since Ten-Tec has traditionally emphasized high-fidelity transmission (remember, the founder of Ten-Tec was also the founder of ElectroVoice), I have found that the Ten-Tec external RF speech processor (model 234) to be invaluable. I have a pair of monitor scopes (see photo) which are always in use to ensure that things are working properly. The Orion has very fine speech processing available and doesn't benefit from the external processor as the OMNI VI and Corsair series do. Be sure to monitor yourself in the second receiver while you set up your processor.

Speaking of speaking, you need a Digital Voice Keyer. I use the W9XT Contest Card. Only one is needed, because you can only legally transmit on one radio at a time in the contest. Your microphone audio is run through the DVK, then back to the SO2R box (I use the TopTen DX Doubler) where it is distributed to the proper radio.

Since you're going to be tuning at least one radio for at least 48 hours, you need a comfortable tuning knob. I can't believe that those \$10,000 JA radios still make no provision for an external knob. The Ten-Tec knobs are money very well spent. I don't know whether Sam, K9SD, still sells his add-on knobs for the JA radios or not. I know that with my aging wrists and thumbs I'd be unable to compete without those knobs.

Tuning across an unexpectedly loud signal on an otherwise dead band can be very painful. I have some limiters permanently placed across my radio audio outputs to protect my ears. Again, with two radios there are a lot more ways you can hurt yourself.

#### Inside your head

I guess the comparative advantage many SMCers have acquired is perseverance. As Vince Lombardi said, "We will chase perfection. We won't catch perfection, but by chasing perfection, we'll capture excellence."

Remember, a one QSO hour is better than a zero QSO hour. Don't forget that the hare slept himself back into second place while the tortoise walked past him.

It's just a hobby. Have fun. Remember the Amateur's Code: "The Radio Amateur is BALANCED...radio is an avocation, never interfering with duties owed to family, job, school or community." And, also "CONSIDERATE...never knowingly operates in such a way as to lessen the pleasure of others."

Remember those last words when you get ready to jump in on us low powered operators in a pileup!



Gathering at the SMC table at Winterfest 2008 in Collinville, IL. Back (l to r), Danny, NG9R; Kevin, W9GKA; Karl, K9BGL; Brian, K9QQ; Chuck, KI9A. Kneeling is Mike, KB9WQJ; George, AB0RX. A number of other SMCers checked in at the table, but didn't make it for the picture including: Brad, W9FX; Don, W9EBK; Claudia, N9HHE; Skip, WS9V; Darell, N9DT; and Paul K0JPC.





Ralph, K9ZO, snapped this picture of the K9SD antenna farm from the back of his property. The poles in the foreground support phased K9AY pennants for low band receiving. The two towers in the background are 135ft and 120ft.

#### Sam's antennas include:

160 - 120' shunt fed tower 80 - 4 sq sloping dipoles 40 - 2 el @ 140', 2 el @ 50' (separate tower) 20 - 5 el 48' boom @ 120' 15 - 5 el 36' boom @ 135', 5 el 36' boom @ 70' 10 - 3 Stack KT34xa 120'/80'/40'

#### Receiving:

3- 500' bev, E, W, NE Phased pennants NE, K9AY array.

The ops at K9SD spent the first night working Europeans with the 2 element, 40 meter yagi pointed due south. On Saturday morning, K0RAY climbed the 135 foot tower and spun the antenna to the northeast so they could make up ground on Saturday night. The high 40 meter yagi is at the top of a tower with stacked KT34XAs.



The Black Hole page 11



# 2008 Wisconsin QSO Party

March 9, 2008 from 1800Z to 0100Z March 10 (1:00PM CDT to 8:00PM CDT) Note: This is the first day of Daylight Savings Time!

http://www.warac.org/wqp/wqp.htm

# **Missouri QSO Party**

Sponsored by

Boeing Employees' Amateur Radio Society

Apr 5 1800Z - 0500Z

Apr 6 1800Z - 2400Z

http://www.qsl.net/w0ma/contests.htm

Member/New Member Information/ Update Form Name: Call: Address:	<ul> <li>We need your input for the next 'Hole!!</li> <li>⇒ Operating stories</li> <li>⇒ Station construction</li> <li>⇒ Operating accessories</li> <li>⇒ Packet and computer hints</li> <li>⇒ Product reviews</li> <li>⇒ Plug your upcoming DXpedition</li> <li>⇒ Your idea here</li> </ul>
Phone:	Please consider putting an article together today!



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FIRST CLASS MAIL