

# THE BLACK HOLE



**ARRL SS Unlimited Team Champs 2000, 2001, 2002**

**Official Journal of The Society of Midwest Contesters**

*Volume XV Issue II*

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## **Competitive Contesting With a Modest Station**

*By Pat Hoppe, WW9R*

So you say that you don't have room for 200 feet of aluminum in your backyard? Cheer up Bucky, not many of us do. The village I live in has strict ordinances on towers, so I have to look for an alternative. My lot is 65 feet wide and 175 feet deep. Unfortunately the previous owners did not plant trees in the proper locations for supporting dipoles or inverted L's. So what is a budding contesteer to do? I turned to multi-band verticals.

I started with Gap Titan DX Vertical. Although it played well on 10 through 40 meters, it was narrow banded on 75/80 meters. The value of the capacitor at the top of the antenna determines whether it is for 75 or 80 meters. Unfortunately mine is set for 75 meters. In an effort to put out a respectable signal on 80 and 160, I put up a Gap Voyager. I always hated it when the gang moved to 160 and I was left behind. Now I can tag along.

Ok, so you're wondering how does a guy contest with only two verticals? The first thing you do is avoid the high power category. I will never be able to compete with the big guns running high power. Their stacked arrays and 1.5 kw will bury me. I need to com-

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## **Upcoming Contests**

Minnesota QSO Party	3 Feb 07
North American Sprint, SSB	4 Feb 07
CQ WW RTTY WPX Contest	10-11 Feb 07
North American Sprint, CW	11 Feb 07
ARRL School Club Roundup	12-14 Feb 07
ARRL Inter. DX Contest, CW	17-18 Feb 07
CQ 160-Meter Contest, SSB	24-25 Feb 07
North American QSO Party, RTTY	24-25 Feb 07
ARRL Inter. DX Contest, SSB	3-4 Mar 07
North American Sprint, RTTY	11 Mar 07
Wisconsin QSO Party	11-12 Mar 07
CQ WW WPX SSB	25-25 Mar 07
Dayton Hamvention	18-20 May 07

## **15th Annual Dayton Contest Dinner**

**May 19, 2007**

**Cash bar starting 5:30pm, Dinner at  
6:30 PM**

**Crowne Plaza  
Van Cleve Ballroom**

**Tickets available only via the web at:**

**<http://www.contestdinner.com>**

# The Black Hole



**The Black Hole** is published monthly, September through June, by The Society of Midwest Contesters. Permission for use of the materials is hereby granted on the sole condition that credit is given to the source of those materials.

## EDITOR

Brian Maves, K9QQ

Material for **The Black Hole** should be forwarded to:

**k9qq@arrl.net**

Membership in **The Society of Midwest Contesters** is open to all persons with a bona-fied 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:

## BOARD

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# SMC Needs Your Financial Support

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.

You can make your donation two ways:

1. Send a check, money order, or cash to:

JON OGDEN, NA9D  
905 SURREY LN  
ALGONQUIN IL 60102-2058

2. Use Paypal and email your donation to [dues@w9smc.com](mailto:dues@w9smc.com).

# W9SMC

Official Callsign  
of  
The Society of Midwest Contesters

SMC Web Page: <http://w9smc.com>

## SMC Stuff

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



**Badges**

**Order Today!**



**Shirts**

## Meet the SMC Board



**Name:** Pat Barkey, N9RV (ex WA8YVR)

**Hometown:** Albany, IN (for now); born Flint, MI

**Occupation:** Research Economist

**Number of years as a member:** 5

**Favorite contest:** CQ WW CW

Pat's career highlights include participation in WRTC 1996, 2002, and 2006. For him the most enjoyable part of contesting is station building and meeting long term challenges. His lifetime goal was to win a DX contest from Midwest. He did manage to win ARRL CW in 2006, but has never done better than #2 in his favorite contest, WW CW.



**Name:** Chad Kurszewski, WE9V

**Hometown:** Bristol, WI (near Kenosha, WI)

**Occupation:** Electrical Engineer, Manager for Motorola in Libertyville, IL (cell phone division)

**Number of years as a member:** Around 17

**Favorite contest:** Toss up between NAQP and SS

Chad was licensed in 1987 and ran his first contest in 1987. His contest-peditions started with **FS5PL** in 1996, then **6D2X**, **KH7R** a few times, **9Y4**, and **PJ2T**. He was instrumental in designing, building, maintaining and operating the previous KS9K/W9JA/K4JA super stations. He has also guest op'd at W0AIH, K9NS and W9UP.



**Name:** Mike Wetzel, W9RE

**Hometown:** Indianapolis, IN

**Occupation:** Consulting Electrical Engineer, Wetzel Electrical Engineering

**Number of years as a member:** Not sure on years as a member 10, 15 really not sure at all, maybe it's twenty absolutely no idea. you know how time flies.

**Favorite contest:** CQWW

Mike participated in the 1990 WRTC and finished 2nd with K7JA. He has operated at **PJ4R** ARRL CW 2004 M/2 (Bonaire), **PJ2T** CQWW CW 2004 M/M, **PJ4R** ARRL CW 2005 M/2 -1st Place, **T15N** ARRL CW 2006 M/2-1st Place, **HP1XX** ARRL CW 2007.



**Name:** Zig Markowski, KM9M / V26CW

**Hometown:** Lemont, IL

**Occupation:** Retired firefighter/paramedic, now part-time 911 dispatcher

**Number of years as a member:** Since the big push... when was it 2000, 2001? Signed up by K9PG while in the #CQDX chatroom.

**Favorite contest:** WPX CW, CQWW CW, or any test from V2

Zig has taken over the task of keeping the membership roster up to date. He has been on a number of contest dxpeditions including **V26B** - CQWW SSB 04, **V26DX** - CQWW SSB 03, ARRL DX SSB 04. He's been adopted by the Jolly Rogers of Team Antigua (V26B) .. Nice group of guys...(since the shutdown his hotel management of V26DX.)



## Meet the SMC Board



**Name:** Lid (aka Paul), K9PG (most recently)

**Hometown:** Warrenville, IL - west suburb of Chicago

**Occupation:** IT (aka computer crap)

**Number of years as a member:** Around 20

**Favorite contest:** NAQP

Paul has been past prez... head cheerleader... chief beer drinker.....



**Name:** Jerry Rosalius, WB9Z

**Hometown:** Near Crescent City, IL

**Number of years as a member:** Been part of SMC since almost the beginning.

**Favorite contest:** That's hard. CQWW SSB, ARRL DX SSB, CQWW 160 CW. I enjoy most CW and RTTY DX Contest. I also contest on 6 meters - 1296.

Contest expeditions: **VP5F** in 2001 for CQWW 160 CW with AK9F and K9NR, # 2 World multi-op.

**9M0M** Spratly Islands 2001, we operated in ARRL DX SSB contest during 10 days on the Island, # 1 Asia multi-op

Jerry is one of the 20 members of the Caribbean Contesting Consortium, **PJ2T**. He and his XYL, Lori, usually spend 40 - 50 days a winter at or near the PJ2T station. He does a lot of the tower work, which is constant due to constant exposure to salt air. He has lost track of how many contest he has operated from PJ2T. But the most memorable contest was the 2003 ARRL DX SSB Contest, when he teamed with Tom AE9B and Marty NW0L and ran Multi-op Two transmitters with 3 operators. When the dust settled they were Top World with 12,510 QSOs, beating even the multi-multi's. He has also contested from **WP2Z** a couple of times, and has been on DXpeditions to **9M6** East Malaysia, **VK9X** Christmas Island and **VK9C** Cocos Keeling.



**Name:** Ralph Bellas, K9ZO

**Hometown:** Bloomington, IL

**Occupation:** Computer Systems Designer and a partner in a landscaping company

**Number of years as a member:** How old is dirt? Way back in the beginning of time. Who remembers ILWind?

**Favorite contests:** SS, IQP

Ralph chases DX, competed in WRTC 2000 in Slovenia, and is a past SMC president, way back when we used to meet on the air and email was a new and cool thing.



**Name:** Scott Neader, KA9FOX

**Hometown:** La Crosse, WI

**Occupation:** Internet Engineer, CenturyTel + Owner of QTH.com

**Number of years as a member:** heh, you said 'member'. (no idea... maybe '90 ?)

**Favorite contest:** SSB Sprint !!!

Scott has three kids under 10 years old. He's founder and long standing member of the Sultans of Shwing (with K9NW and WE9V).

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# The Beacon of the Southern Hemisphere

By Ralph Bellas, K9ZO

After a successful DXpedition to the Kermadecs with the ZL8R group in early October 2006 I spent some time in New Zealand so that I could see the country and learn about the people. Our ship, the RV Braveheart, docked in Tauranga, which is a few hours south of Auckland on the North Island. I rented a car and the following day headed inland and south. My plan was to spend a few days as a tourist driving to Wellington on the southern coast of the North Island. From there I would meet the crew from the Quartz Hill Radio Club, ZL6QH, for a multi-multi effort in the CQWWSSB contest. I travelled through Rotorua with it's volcanic hot springs and bubbling mud, then spent time in Taupo, known for the fresh water lake the size of Singapore. I continued south through Turangi, National Park, Waiohuru, Mangaweka, Bulls, Palmerston North, Pahiatua, Masterton, Lower Hutt, and finally Wellington. The scenery was tremendous and I felt I had a sense of what the North Island was like.

It wasn't long after arriving in Wellington that we were on our way out of the city through small towns, following winding roads up the hills to the station. We made our way on a narrow two lane curving roads through rural areas passing sheep farms. No straight north-south roads around here! Eventually, we reached a farm, and the road became a single lane, then a path. We continued to progress upwards, opening and closing a series of gates through the pastures. The scenery is awesome as you look south across the Cook Strait and see the South Island. The isolation is astounding. At night there are only a few lights visible on the horizon.



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pete in the low power category. That being said, be sure to put out the best possible signal with your 100 watts. My contest mode of choice is CW. A modest station can put out a respectable signal running 100 watts on CW. Don't be afraid to call CQ. S & P will only get you so far. If you want the bigger scores, you have to run stations. In the



**Ground-mounted GAP Voyager.**

beginning other Ops said I shouldn't call CQ, after all I only had a vertical. I believe them... for a while. Now I call CQ almost exclusively. Am I the loudest signal on the band? Absolutely not, but I am there, calling CQ and folks come back to me.

Speaking of CW, practice, practice, and practice some more. I have been told that I should be conversational at



**GAP Titan (l) and ground-mounted GAP Voyager.(r).**

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This location was formerly used as an international receiving site by the government of New Zealand. Now the club has the use of the buildings and antennas and holds regular work days for maintenance. And regular maintenance is required! No matter how well constructed the antennas are, nature wins. It's windy. It's very windy. In fact, the wind frequently howls as it roars in from the sea, making it difficult to stand up. The rain just beats against the building and blows horizontally for hours. It's so cool!



I had arrived a few days early to help with antenna work. It was so much fun and invigorating to be outside during these conditions, trying to get things fixed. The ladders had to be tied on to the poles to keep them from blowing away. Any loose feedline or rope will be ripped to threads in a short time. I learned a lot about how to protect antennas and feedlines in severe conditions. We managed to get most of the antennas repaired before the contest.

Rotary antennas just can't survive these harsh conditions, so fixed beams have been constructed of tubing and solid aluminum rods held up by rope. Feedlines are typically made of open wire. Power to the site is buried, and those low poles you see in the pictures are not power poles, but part of the feedline infrastructure.

These yagis supplement the rhombics and vee beams that are available on the low bands. The vee beams are long! One leg of a vee beam took most of a morning to repair. The wire was thousands of feet long, stretched across a valley, and had broken. We strung new wire, fastened it to the top of a 60 ft pole, and walked it across the valley. A car is needed to pull up the wire. To give you an idea of how large these were, notice in the picture that from the car you must cross a pond, then there is a tall pole on the ridge. That's the attachment point of the other end of the wire. The smaller poles are just for the open wire feedlines.

Since I had arrived days before the contest I was able to

stay at the station and do a bit of operating at night to get familiar with the conditions. What was most interesting was to realize that the entire country is isolated. There are



thousands of miles of ocean to cross before reaching any populated areas. At home we might be expecting to hear the east, west or south coasts during the day, or slightly farther in the late afternoon. From New Zealand there a few Australians or an occasional guy from the Pacific area. As the bands developed JAs and W6 stations could be heard. But Europe was far away -- on the other side of the world. Any contact was far, far away, particularly on the low bands.

The station was outfitted with operating rooms, a kitchen, bedrooms, a shop, and storage areas. It reminded me of visits I had made when I was first licensed to old broadcast stations that were built in the 1940s -- a ham's heaven. Many of the crew arrived early to assist with the antenna repairs, and we were able to get the stations assembled without any difficulties. There were two guys from the States, two from Australia, and the rest from kiwi land. Equipment was borrowed from hams in the vicinity and a computer network established. I was quite impressed with the expertise that had been assembled. There was lots of flexibility because the operating rooms had originally been broadcast studios. The operating positions each had windows that overlooked the Cook Strait and we could see the South Island in the distance. The view was tremendous, and the beautiful hues of blue and green at sunset made this a place I will never forget.

It was pretty easy to transpose our propagation to this part of the world, but one still had to remember that there are no population centers for thousands of miles around. It's great fun to hear all the Asians call in. VR2, 9M, BY, and DS are essentially locals, but Europe is far, far away. Every QSO with Europe was special. The big club stations were loud, but generally could not hear.

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From this location both short and long path are needed, and the station had effective antennas in both directions. South Americans were not too hard to get, but their antennas were generally not pointed out west towards us, so it took a few tries to catch their attention. This is quite similar to us working Hawaii from the Midwest. Generally our antennas would be to Europe, and it takes a pretty big station from Hawaii to catch our attention, even though the band is open. So here's the secret. In your mind keep track of how daylight crosses the Pacific, and pay attention to those times after their sunrise when the bands would be open. They hear us, but can't break through. Likewise, the Caribbean has openings, but their antennas are pointed NE, N, or NW. It usually took a couple tries to catch them, but if they turned their antennas they were loud!

I was assigned to 40 meters, so initially it was pretty quiet and I had a chance to check out the activity on the other bands. My experience from Raoul Island was very useful because I was on the night shift during the DXpedition and got quite familiar with propagation. The first night was a bit rough because of the precipitation static and some feedlines that were touching. This limited the available antennas. However, the second night I really go to see how awesome the antennas were! Huge vee beams on the low bands really work.

Three things stand out in my memory from operating the lowbands. Anyone can get through to ZL6QH because it is absolutely quiet on the bands. There is nothing for miles around and the site is high and overlooks the ocean. There are so many loud guys from the USA that get through just by covering up everyone, so you just have to wait your turn, but you can get through on the low bands. Just know the local sunrise and keep trying. However, precise timing in the pileup is essential.

The second thing was a source of frustration at first until I remembered my own principles. . An hour past daybreak the European club stations get really loud and a few good multipliers show up. But, rate drops, and then stops, and you can't work anyone. Daytime propagation is setting in, the QRM level is very high in Europe, and they are running more power than ZLs can. Remember the local sun!

Finally, there are sections of the bands that are completely unusable due to non-ham interference in that part of the world. I recall that at 1200Z the bottom 100 khz of 40 meters became unusable from some over-the-horizon radar. Rate stopped, and you have to resort to moving out of productive parts of the bands, not being able to work any Europeans, or trying to work split, but being too high in the bands. The key to getting through is to get in early. The big guns do this naturally, but it's well worth your while to try to work Pacific stations as early as possible.

Here's a summary of our score for the 2006 CQWWSSB contest:

Band	QSO	Zone	Country
160	76	9	9
80	309	25	44
40	888	30	80
20	1447	34	121
15	1506	26	68
10	546	21	28
Total	4772	145	350

I call ZL6QH the "Beacon of the Southern Hemisphere" because they have a dedicated, talented and active group who love radio. What can be better than a beautiful DX location, no noise, no TVs for miles, no power lines, and great antennas? You can work them on all bands, even in the sunspot lows by knowing the conditions and paying attention to the times when propagation is good in that direction. Often, however, they are the only station coming through from that part of the world, and hours before you anticipate them. Turn those antennas southwest, early as the Europeans fade, and as the sunrise crosses the Pacific.

It's likely that ZL6QH will not be as active during 2007 because the facility will be used as construction headquarters for a huge project that will place wind generators on the surrounding hills. The power company will be working closely with the hams to determine the impact on the noise level. Keep track of the progress at [www.zl6qh.com](http://www.zl6qh.com).

I appreciate the hospitality and opportunity to operate from such a fine station and I always have good memories of my trip when I hear them on the air.



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40-45 WPM if I want to compete competitively. That kind of speed takes practice. I listen to MP3s of past contests while I drive to work each day. I am still not at those speeds, but my speed has increased substantially.

If you don't have room for long beverage antennas or directional yagi's, then you better have quality filtering in your radio. I filled my Mark V with both SSB and CW filters. In



**The station.**

addition to the filters, I continually work on mastering my radio. I am willing to bet most of us only use a small percentage of our radio's capabilities.

But even more important, learn to become a good operator. While contesting I listen to the great ones. If I run across Op's like Mike W9RE, Steve, K0OU, or Pat N9RV in a contest, I will stop and listen to them run. The fluid exchange of information is very much like a ballroom dance. Although very technical in nature, when done correctly it look (or sounds) like there is no effort at all.

I know what you are thinking, "If I only have a station like XYZ, I would take 1st place too." I would be willing to bet that I could switch stations with any of the Big Guns and they would still substantially out score me. Yes it helps to have the stacked arrays, the large amplifiers, and all of the fancy extras. But the most important piece of equipment in that station is the operator. Get in every contest you can and practice your skills. If you work a smooth sounding Op, stick around a bit and learn from them as they work a few more Ops.

My modest station consists of a Yaesu Mark V, a Keywood TS-570D, and two Gap verticals; the Voyager and the Titan DX. I use the MicroHam CW keyer and N3FJP's contest software. I do own an Ameritron AL-811H amplifier, but I only use it for chasing DX.

So if you have a modest station, work on improving your biggest asset – your operating ability. If you hear me calling CQ in the next contest be sure to say hello.

## Meet the SMC Board



**Name:** Mark Obermann, AG9A

**Hometown:** Niles, IL

**Occupation:** Electrical Engineer

**Number of years as a member:** 25 years? Was ILL WIND Contest Club member, precursor to SMC

**Favorite contest:** SS CW, CW Sprint

Mark participated in two WRTC's and many contest and expeditions. He is the past NCJ CW Sprint editor. And as most of you know, is now co-owner of International Radio.



**Name:** Ron Feutz, KK9K

**Hometown:** Wisconsin Rapids, WI

**Occupation:** Owner of Two-Way radio business

**Number of years as a member:** About 10 years

**Favorite contest:** CQWWCW from the DX side

Ron has been to J7 Dominica 3 times, one CQWWCW, 2 ARRL CW, and leaves again this Thursday for J7. He would like to see a bigger emphasis on multi-ops for SS (and other tests) - its mucho fun and a good way to build participation and increase club points.



## HANDIMAN'S GUIDE TO SOLAR ACTIVITY & HF PROPAGATION FOR THE QRP<sub>er</sub>

by Paul Harden, N4SN (na5n@zianet.com)  
Very Large Array (VLA) Radio Telescope  
Socorro, New Mexico USA

### USEFUL LINKS:

[www.sec.noaa.gov/today.html](http://www.sec.noaa.gov/today.html)

Official Space Environment Center current  
"Space Weather" from NOAA. Also check:  
[www.spaceweather.com](http://www.spaceweather.com)

[www.dxlc.com/solar](http://www.dxlc.com/solar)

Graphical display of solar flux, sunspots and  
A-Index by Jan Alvestad, SOHO Images, and  
other very useful information.

<http://umtof.umd.edu/pm/>

Solar wind data (speed and density) from  
proton monitor on SOHO satellite.

[www.spacew.com/www/realtime.php](http://www.spacew.com/www/realtime.php)

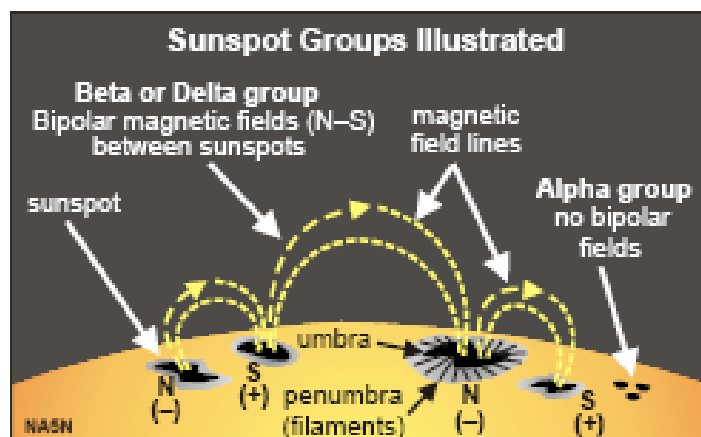
Near real-time MUF (max. usable freq.) map

[www.drao-ofr.hia-ihh.nrc-cnrc.gc.ca/  
icaros/www/current\\_flux.shtml](http://www.drao-ofr.hia-ihh.nrc-cnrc.gc.ca/icaros/www/current_flux.shtml)

Current solar flux from the "horses mouth" - Peritidin

### Classifications of Sunspots/Active Regions

Sunspot Class	Description of the Active Region	Potential for Solar Flare Activity
ALPHA	Unorganized, unipolar magnetic fields	Little threat, but watched for further growth
BETA	Bipolar magnetic fields between sunspots	C class flares and possible M class flares
DELTA	Strong, compact bipolar fields between sunspots	High potential for large M or X class flares



### Geomagnetic Indices & Conditions

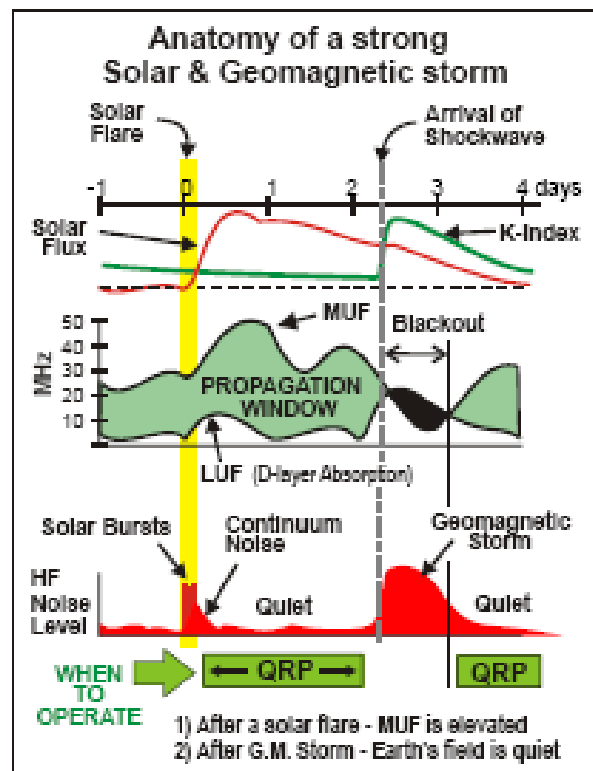
	K Index	Ap Index	Geomagnetic Conditions	HF Noise	Aurora
NORMAL	0	0-2	Very Quiet	S1-S2	None
	1	3-5	Quiet	S1-S2	None
	2	6-9	Quiet	S1-S2	Very low
	3	12-19	Unsettled	S2-S3	Very low
STORM	4	22-32	Active	S2-S3	Low
	5	39-56	MINOR storm	S4-S6	High
	6	67-94	MAJOR storm	S6-S9	Very high
	7	111-154	SEVERE storm	S9+	Very high
	8	179-236	SEVERE STORM	Blackout	Extreme
	9	300-400	EXTREME storm	Blackout	Extreme

Equivalent Planetary A-Index (Ap)  
Geomagnetic conditions yesterday  
For current 3-hour conditions, use K-index

### Solar Flare Classifications

Flare Class	Type of Flare	HF Radio Effects (30M to 10M)	Geomagnetic storm (<20M)
A	Very small	None	None
B	Small	None	None
C	Moderate	Low absorption	↑ Active to Minor
M	Large	High absorption	↑ Minor to Major
X	Extreme	Possible blackout	↑ Major to Severe

↑ Conditions cited only if Earth is in the trajectory of the flare's shockwave.



## SMC Stuff

### SMC Clip-on Badge

by NV5A

The SMC logo appears at the top-center of the badge in black and white. Your call sign, first name and city & state appear in dark blue. The SMC name badge as shown with the slot & strap with swivel alligator clip, but there are other choices.

Price: \$14.50 (includes s&h).

Order now from **The SignMan**

Visit his full color web page to see other items you can get with the SMC Logo:

[www.thesignman.com/color/](http://www.thesignman.com/color/)



### KC9FD

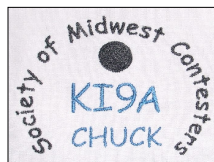
**SOCIETY OF MIDWEST**

Club badges can be obtained by sending a check for \$5.50 to:

**Midwest Engraving**  
6657 N. Sidney Place  
Glendale, WI 53209

**Ph: 414-228-8654**  
**Fax: 414-228-8655**

Be sure to note that it is for a "Black Hole" badge and please allow a couple weeks for delivery.



### SMC Shirts

SMC short-sleeve Polo shirts are available in two styles: white shirt with "SMC" in black and "name and call" in blue lettering as shown below, or red shirt with black lettering. The cost is \$20, including shipping. You can email your orders to AD9P@swbell.net (Al) or N0UXQ@swbell.net (Sandy)



## State QSO Parties

### Illinois

October 22-23, 2006

<http://www.w9awe.org/ILQP.html>

### Wisconsin

March 11, 2007

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

### Indiana

May 5-6, 2007

<http://www.hdxcc.org/inqp/index.html>

### Missouri

April 7-8, 2007

[http://www.qsl.net/w0ma/mo\\_qso\\_party.htm](http://www.qsl.net/w0ma/mo_qso_party.htm)

## Member/New Member Information/ Update Form

Name: \_\_\_\_\_

Call: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Please send updates to:

**JON OGDEN, NA9D**  
**905 SURREY LN**  
**ALGONQUIN IL 60102-2058**

## We need your input for the next 'Hole!!

- ⇒ **Operating stories**
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- ⇒ **Operating accessories**
- ⇒ **Packet and computer hints**
- ⇒ **Product reviews**
- ⇒ **Plug your upcoming DXpedition**
- ⇒ **Your idea here**

**Please consider putting an article  
together today!**



## The Society of Midwest Contesters

*Brian Maves, K9QQ*  
*1322 Engle Creek Dr.*  
*O'Fallon, IL 62269*

FIRST CLASS MAIL

