



Saint Paul Radio Club, Inc.

www.stpaulradioclub.org

The Ground Wave

February 2008

MN QSO Party

The 2008 Minnesota QSO Party, sponsored by the Minnesota Wireless Association, will be Saturday, February 2nd. The purpose of this fun activity is to enable operators to work as many Minnesota counties as possible in the ten hours from 8:00 a.m. to 6:00 p.m. CST. To facilitate this, "rovers" will attempt to travel to every county with a sparse ham population. Complete information including log forms and downloadable software is at www.w0aa.org.



WØZQ in Dodge County in 2007

2007 MN QSO Party Results SPRC Does Well!

Orcy Lyle, WØQT

With only five entries, the St. Paul Radio Club came in 9th out of 41 clubs in the Club Competition category of the 2007 MN QSO party--in the top 22% of clubs that participated. SPRC had 54,968 points. The top team, Northern MN DX Association, had 5 entries and 256,132 points.

The majority of the SPRC points were gained by **Tom Bredemus, KCØINP**, 33,441 points and **John Desmond, KØTG**, 20,832 points. The rest of SPRC's points were gained by **Richard Buenger, KCØVDP**, **John Hunt, KGØJD**, and **Orcy Lyle, WØQT**, operating as **WØSTC** at the University of St. Thomas Amateur Radio Club station.

(Continued on page 2)

Saint Paul Radio Club Meeting
Friday, February 1st, 2008, 7:30 p.m.
Socializing 7:00 - 7:30 p.m.
University of St. Thomas
Murray-Herrick Campus Center, Room 155



Pat Tice, WAØTDA Grounding Basics for Vertical Antennas

We have all heard that vertical antennas don't work very well. Typically the complaint is not "grounded" in real-life experience! It is a ham radio urban legend that is repeated often—but where does it come from, and is there any truth to it?

Find out the answers to these and other intriguing mysteries, including the origins of the antenna with the funny name: Butternut.

Patrick Tice, WAØTDA, is Manager of Courage Center's Handiham program and was one of the founders of the Butternut Antenna Company. Pat was licensed in 1967 as WNØTDA and presently holds an Extra Class license and an FCC Commercial broadcast license. He has been with Courage Center since 1991. He enjoys operation on the HF bands, local repeaters, and EchoLink from his basement bunker ham shack deep in an undisclosed location somewhere in Woodbury.

Directions to Meeting: Take the Cretin-Vandalia exit from I94 and take Cretin Avenue six blocks south to the St. Thomas campus. Murray-Herrick Campus Center, site of the meeting, is off of Cleveland Ave. South, which is two blocks east of Cretin. Enter the parking lot from Cleveland Avenue South, between Ashland and Portland Avenues. Go in the door at the west end of the parking lot and turn right after the second set of double doors, then around through an open area to **Room 155, on the 1st floor**.

Parking permits are not needed after 6 p.m. on Fridays in the red and yellow lots.

Maps are available at www.stthomas.edu/campusmaps/stpaul.asp. The color version is easier to read but takes longer to download than the black and white version. MHC is #5 on the map; the most convenient parking (and access to the dock) is lot G..

Monitor the club repeater, KØAGF, for talk-in help. 145.31—no tone needed

NOOZ from the PREZ

Tnx to everyone who helped make the Auction a success, including those working behind the scenes as well as the Auctioneers. Our Auctioneers made this the funnest Auction ever! There were some good buys, even though the Auction was light on sellers. Our club profit this year was slightly greater than in 2005 or 2006, although about half as much as in 2004 or 2007 (2007 was our best year in the past five years). This year, we had the same number of bidders as in 2006, but about 10 of them came in late this year, making it look like there were fewer bidders than was the case. Some bidders were still coming in the door as earlier bidders were leaving with things they had bought.

Factors thought to account for the light number of things to sell at the 2008 Auction include less extensive advertising of the Auction and lack of estate items.

Keep the MN QSO party in mind. It is fun and SPRC can use all the points that you can designate to the club. Even small contributions of points are very welcome!

The SPRC Emergency Communications course is currently underway, with a General License course to follow this spring. The ham radio course at the St. Paul Washington Middle School will be starting at the end of January. Our February meeting is early, February 1st, with an interesting program on verticals and grounding, with some history of the Butternut antenna thrown in, given by **Pat Tice, WAØTDA**, one of the founders of Butternut Electronics.

CU at the February meeting!

SPRC email Addresses

Due to too much spam to the email addresses (at) stpaulradioclub (dot) org, the email addresses have been migrated to the same "function name" (at) stpaulradio (dot) org (note there's no "club" in the new address). See the volunteer list on page 7.

General License Class SPRC Classes start in March

The St. Paul Radio Club will be sponsoring a series of classes for Technician licensees who want to upgrade to General level.

The classes will begin on Monday, March 10, and will be held each Monday night during March and April, ending on April 28. The classes will start at 7:00 p.m., and should be finished by 9:00 p.m.

The classes will be held at the Roseville Fire Station at 2701 Lexington Avenue North in Roseville (just north of County Rd. C).

There is no charge for the classes, but participants must purchase a copy of the ARRL's General Class License Manual. It is available at Radio City, as well as directly from the ARRL at arrl.org.

Persons wishing to register for the class should send an email to **Allan Klein, WØNLY**, at allankmn@cs.com. In the alternative, registrants should call him at 651-291-8815.

(Continued from page 1)

Three Twin Cities radio clubs were ahead of SPRC in the Club Competition category (TCFM Club, Northern Lights, and S.M.A.R.T.S.) Six Twin Cities clubs made fewer points than SPRC. For more details about the contest results, see www.w0aa.org/PDF/MNQP_RESULTS_2007.pdf.

The home page for the MN QSO party is www.w0aa.org/mnqp.htm. Everything you need to know to operate and log during the MNQSO party is here. Results are given for a number of contest categories. New hams, note that there is a VHF category. SPRC sponsors the MN Multi-Op category and the plaque given to the winner in that category bears the name of our club.

Plz think about operating during the contest this year, sending in a log, and designating your points to the St. Paul Radio Club!

Washington School Volunteers needed to help with classes

Our club has formed a partnership with Washington Technology Magnet Middle School. We are going to offer an after-school program for a select group of students who want to learn about wireless communications and get their ham radio licenses. We need volunteers who can help with the classes.

The classes will be held on Monday afternoons, between 3:00 and 4:45 p.m., at the school, which is near Rice and Maryland on the city's North End. They will begin on January 28, and will run every Monday through February, March, April and May.

Each class session will include three parts: some "lecture" on Technician-grade exam materials, some building and construction, and some operating using the school's newly assigned call, **KDØCNH**. The school has applied to the ARRL's Education and Technology Program for a grant that will allow it to get its own equipment. But for now, the Club has loaned some equipment to the school so that the students can get some real on-the-air experience.

The school's Science teacher, **Denise Kapler**, just passed her Technician exam, and has received the call **KDØCOT**. And the school's Assistant Principal is **Renee Jensen, KCØVDA**.

"It will be a lot of fun to work with these kids and get them licensed," said **Allan Klein, WØNLY**, who is coordinating the classes. "Volunteers can sign up for one session, two sessions, or more. I will be there every week to lend continuity and help as I can, but I hope the individual volunteers will take the lead for their sessions," Klein said.

Persons interested in helping with the classes should send an email to Allan Klein, WØNLY, at allankmn@cs.com.

Get On The Air!

John Hunt, KGØJD

With so many possibilities of sophisticated antenna systems and low-loss feed lines to choose from, newly-licensed hams may get stuck and become discouraged about trying to operate on the HF bands. These hams need to have a way to get on the air right now, so that they can then think out loud (aka "talk") in QSOs on the air about antennas, radios, feed lines, etc. This is the essence of ham radio.

My recommendation for putting an HF rig to work communicating with the world quickly and successfully is to cut wire to the proper length for a simple 40-meter home-brew wire dipole, center-fed using RG-58 coax. The wire for the legs of the dipole can be almost anything--insulated or not. For example, TV twin lead has good tensile strength and both conductors can simply be soldered together. For a cheaper and less obvious dipole, a single strand of 22-gauge (or smaller) wire works fine. I prefer copper-coated steel for tensile strength, but even fine enamel-coated copper wire will work.

The 40-meter dipole "as is" will also be resonant on the harmonic frequencies of the 15 meter band, providing access to 15 meters. Using the antenna formula of [length = 468/Mhz], for 7.2 Mhz, the total wire length needed for the 40-meter dipole is 65 feet, cut into two legs of 32.5 feet each. Allow one to two extra feet for connecting and securing the wires to the end insulators and to the center insulator. Stick with this dipole length so your antenna tuner, if used, only has to "touch up" impedances. The ends of the legs are terminated at insulators connected to enough nylon rope to attach them to whatever supports are available. These can be any combination of trees, corners of houses, fence posts, etc. The center insulator can be made from a short length of PVC tubing drilled for screw-eyes to secure the wire of the legs, with the coax feed line braid and center conductor soldered separately to each of the legs. For a little more money, a commercial balun-type center insulator is handy. In fact, give

yourself a break, and use RG-58 coax with a PL-259 connector on each end, and a commercial center insulator with a SO-239 connector to connect the feed line.

The traditional dipole is thought of as having the two legs horizontal, and the feed line stretching gloriously up in the air to the dipole. It doesn't have to look like this. Inverted V configurations work very well, with legs terminated 10 feet above the ground. The legs of the dipole may even be bent into a L-shape if necessary. The higher the dipole, the more coax you'll need to get to the shack. If the shack is on a second floor with a porch, the center feed point can be secured to a wooden porch railing and just the legs angled off (as close to 180 degrees as possible) to supports. This makes for a short run of coax into the shack, for less line loss. Use good lightning and electrical common sense always!

So, if it sounds like Every Day Is Field Day at my QTH, you are absolutely right. It does get my station on the air as I try to figure out ways to improve my signal and to operate new bands and modes. 73 and Have Fun! de KGØJD

Maybe You Need an Elmer

Huh? "What's an 'Elmer,'" you say?

Hams have a tradition of helping each other, and a ham who is mentoring a less-experienced ham is called an "Elmer."

The Saint Paul Radio Club has a Member Technical Assistance committee chaired by **Brian McInerney, NØBM**, to help both newbies and experienced hams who are trying something new. Watch for an article in the March Ground Wave explaining how you can get hooked up with an Elmer.

Elmers who would like to help should contact Brian.

Reward Offered for Desperate Criminal

A reward of 500 microfarads is offered for information leading to the arrest of this desperate criminal, Hop-a-Long Capacity.

This unrectified criminal escaped from a western primary cell where he had been clamped in ions awaiting the gauss chamber. He was charged with the induction of an 18-turn coil named Milli-Henry who was found choked and robbed of valuable joules. He is armed with a carbon rod and is a potential killer.

Capacity is also charged with driving a DC motor over a wheatstone bridge and refusing to let the band-pass. If encountered, he may offer series resistance. The electromotive force spent the night searching for him in a magnetic field where he had gone to earth. They had no success and believed he had returned ohm via a short circuit.

He was last seen riding a kilocycle with his friend Eddy Current who was playing a harmonic.

This Space Available

Contributions to the Ground Wave are always welcome

Send your report, story, monthly column, ad or whatever to

dk@donkelly.biz

or

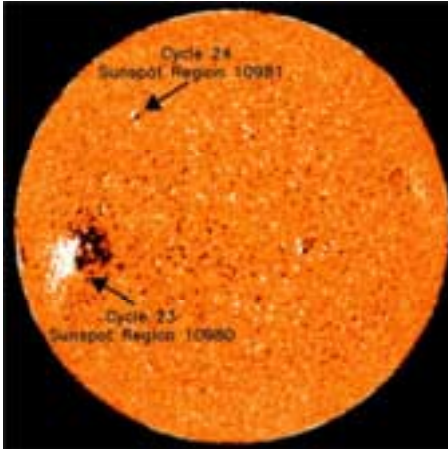
Fax: 651 842-1001

or

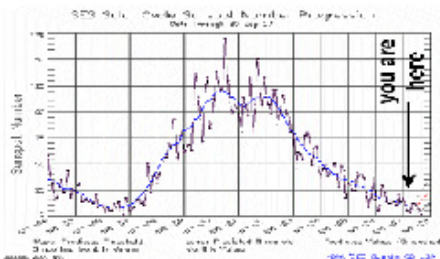
Don Kelly

1547 University Ave W #350
St Paul MN 55104

From the ARRL website:
**Cycle 24 Here,
 Experts Say**



This shows the emergence of Sunspot 981, hailed as the beginning of Solar Cycle 24. The decline of Solar Cycle 23 is evidenced by the gradual disappearance of Sunspot 980. At the start of a solar cycle, sunspots appear approximately 30 degrees from the solar equator. As the solar cycle progresses, sunspots form closer and closer to the equator. [Photo courtesy NOAA]



This chart shows the progression of Solar Cycle 23. With experts claiming Solar Cycle 24 is now here, they expect a strong and vibrant solar cycle peaking somewhere around 2011-2012. [Photo courtesy NOAA/Space Weather Prediction Center]

With the appearance of [Sunspot 981](#) -- a high-latitude, reversed polarity sunspot -- on Friday, January 4, experts at NASA and the National Oceanic and Atmospheric Administration ([NOAA](#)) said that Cycle 24 is now here. "This sunspot is like the first robin of spring," said solar physicist Douglas Biesecker of the Space Weather Prediction Center ([SWPC](#)), part of NOAA. "In this case, it's an early omen of solar storms that will gradually increase over the next few years."

Solar physicist David Hathaway of NASA's Marshall Space Flight Center in Huntsville, Alabama concurred, saying that new solar cycles begin with a "modest knot" of magnetism, like the one that appeared on December 11 on the east limb of the Sun: "That patch of magnetism could be a sign of the next solar cycle. New solar cycles always begin

with a high-latitude, reversed polarity sunspot." The region of magnetism that appeared back in December achieved high latitude (24 degrees North) and was magnetically reversed, but no supporting sunspot appeared until 25 days later.

Reversed polarity means a sunspot with opposite magnetic polarity compared to sunspots from the previous solar cycle. High-latitude refers to the Sun's grid of latitude and longitude. Old-cycle spots congregate near the Sun's equator; new-cycle spots appear higher, around 25 or 30 degrees latitude. Sunspot 981's high-latitude location at 27 degrees North and its negative polarity leading to the right in the Northern Hemisphere are clear-cut signs of a new solar cycle, according to NOAA experts. The first active regions and sunspots of a new solar cycle can emerge at high latitudes while those from the previous cycle continue to form closer to the equator.

Solar Cycle 24 Predictions

While experts vary in their predictions on when the solar cycle will peak and how strong it will be, NOAA, in April 2007, in coordination with an international panel of solar experts, predicted that the next [11-year cycle of solar storms](#) "would start in March 2008, plus or minus six months, and peak in late 2011 or mid-2012." In the cycle forecast issued in April 2007, half of the panel predicted a "moderately strong cycle of 140 sunspots, plus or minus 20, expected to peak in October 2011. The other half predicted a moderately weak cycle of 90 sunspots, plus or minus 10, peaking in August 2012. An average solar cycle ranges from 75 to 155 sunspots. The late decline of Cycle 23 has helped shift the panel away from its earlier leaning toward a strong Cycle 24. The group is evenly split between a strong and a weak cycle."

NASA's Hathaway, along with colleague Robert Wilson at a meeting of the American Geophysical Union in San Francisco last month, said that Solar Cycle 24 "looks like it's going to be one of the most intense cycles since record-keeping began almost 400 years ago." They believe the next solar maximum should peak around 2010 with a sunspot number of 160, plus or minus 25. "This would make it one of the strongest solar cycles of the past fifty years -- which is to say, one

of the strongest in recorded history." Four of the five biggest cycles on record have come in the past 50 years. "Cycle 24 should fit right into that pattern," Hathaway said.

Amateur Radio and Solar Cycle 24

According to Carl Luetzelshwab, K9LA, "As for improvement in propagation on the higher bands, we still have a way to go before that happens, and it depends on the magnitude of Cycle 24. The Solar Cycle 24 Prediction Panel has published predictions for Cycle 24, but unfortunately the panel did not reach one consensus prediction. If the larger of the two predictions comes true, we should expect consistent F2 propagation on 10 and 12 meters to start toward the end of 2009. If the smaller prediction comes true, this will be delayed about one year."

Luetzelshwab, who writes the column "Propagation" for the *National Contest Journal* ([NCJ](#)), continued: "While we wait for improved high band conditions, don't forget the low bands. Around solar minimum and for the next year or so, the Earth's geomagnetic field is at its quietest. This is good for low band propagation. Thus, right now is the time to start (or add to) your 80 and 160 meter [DXCC](#) efforts."

Active Solar Cycles Bring Sunspots, Solar Storms

A [sunspot](#) is an area of highly organized magnetic activity on the surface of the sun, and is marked by a lower temperature than its surroundings. The new 11-year cycle, called [Solar Cycle 24](#), is expected to build gradually, with the number of sunspots and solar storms reaching a maximum by 2011 or 2012, though devastating solar storms can occur at any time

While sunspots are good news to Amateur Radio operators, an active solar cycle can disrupt other aspects of life that we take for granted, since violent

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New Members

A hearty welcome to our
new members

The Barnes family from St.
Paul: Jeffrey, Karen and
Evan (no calls)



Jay Maher, NJØM, presented an interesting program on radio tracking at the December meeting. Jay (black shirt) provided plenty of opportunities for show-and-tell after his presentation.



Dallas Fogg, NØLKD, received the St. Paul Radio Club 2007 Member of the Year Award at the December SPRC meeting.

All pictures on this page courtesy of
Dawn Holmberg, WXØZ



The 2008 SPRC Auction



Board Meeting Minutes

Friday, January 14th, 2008

President Orcy Lyle, WØQT, called a meeting of the St. Paul Radio Club Board of Directors to order on Friday, January 14th, 2008 at 7:05 p.m. The meeting was held at the University of St. Thomas in St. Paul.

Board Members Present:

Orcy Lyle, WØQT, President; **Dale Maroushek, NØPEY**, Secretary; **Skip Jackson, KSØJ**, **Jeff Iverson, WB9DAN**; and **James Klassen, KBØUAZ**. Don Greenheck, NØJPG and Allen Klein, WØONLY were absent.

Don Kelly, WA6ZMT Ground Wave editor, also attended later.

Old Business:

Membership is now over 90.

Auction results were reviewed,

deemed a little below average, but productive and fun. Totals at February Membership meeting and check will be sent to ARRL.

Jay Bellows, KØQB, Division Director, is working toward a Division Convention in August.

The Tech Class at the VA produced 46 Hams out of 49 students.

Our Books for New Members Program will be caught up on.

James has organized programs for the remaining meetings and will confirm them.

Orcy, Brian and Steve will call non-renewing members.

Motion by Jeff, second by Skip, to purchase liability insurance from Marsh Affinity Group for \$360 per year was passed. Protection due to our involvement with Washington Middle School Classes convinced the Board. Orcy will make this arrangement.

New Business:

The Minnesota QSO Party is February 2nd, 2008. Club station will not be open. Members can assign points to the club call, KØAGF, for contest score.

We renamed the Technical Liaison, the Member Technical Assistance. Brian, NØBM, will be asked to publish an introductory article.

Field Day is coming. Chairpersons for all aspects are needed to start planning.

The meeting was adjourned at 8:16 p.m.

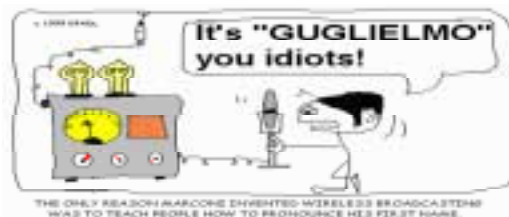
(Continued from page 4)

eruptions occur more often on the Sun during an active period. According to NASA, solar flares and vast explosions, known as [coronal mass ejections](#), shoot energetic photons and highly charged matter toward Earth, jolting the planet's ionosphere and geomagnetic field, potentially affecting power grids, critical military and airline communications, satellites, Global Positioning System ([GPS](#)) signals and even threatening astronauts with harmful radiation. These same storms illuminate night skies with brilliant sheets of red and green known as [auroras](#), or the northern or southern lights.

NOAA Administrator and Under Secretary of Commerce for Oceans and Atmosphere Vice Admiral (Ret) Conrad C. Lautenbacher, Jr said, "Our growing dependence on highly sophisticated, space-based technologies means we are far more vulnerable to space weather today than in the past. NOAA's space weather monitoring and forecasts are critical for the nation's ability to function smoothly during solar disturbances."

According to NASA's Tony Phillips, many forecasters believe Solar Cycle 24 will be big and intense. Solar cycles usually take a few years to build to a frenzy and Cycle 24 will be no exception. "We still have some quiet times ahead," says Hathaway.

What's wrong with this picture?



From The Best of Beasley by Robert Beasley, K6BJH

The St. Paul Radio Club, Inc., has served the amateurs of this area since 1931 except between 1941-45 when most of the members were in the military service. The first issue of *The Ground Wave* was published in November 1938, under editor Frank Vowles, W9BBL. The club call is KØAGF issued in 1956.

Club Meetings are held monthly (except June, July and August), generally on the First Friday at 7:30 p.m. Consult current Ground Wave or club website for meeting location. Social time 7-7:30 p.m. If you have any interest in radio communications, whether you are licensed or not, please accept this cordial invitation to join us as a member or come visit us at one of our meetings or events. All are welcome!

Individual or family dues are \$20.00 per year payable on September 1; new members joining in mid-year are prorated. Student dues are \$10.00 per year. Children 18 and under are free.

The St. Paul Radio Club's "Friendly Net", an informal get acquainted net, meets at 8:00 p.m. every Wednesday on 28.310 MHz.

Want Ads... The Ground Wave solicits your want ads...free to club members, \$1.00 to others.

Free Classes... SPRC conducts free classes in Code and Theory between September and May for Technician and General licenses.

The Mission of *The Ground Wave* is to bring a good blend of local, national and world news affecting amateurs in addition to technical knowledge, club events and humor. The editor solicits your letters, knowledge and first-hand experiences and stories for future articles.

The St. Paul Radio Club is affiliated with the ARRL.



VHF NETS

145.17 MAGIC Repeater Net Saturday 7:00 p.m.
146.76 Saturday Swap Shop Saturday 9:30 a.m.
146.85 MARA Bulletin Board Sunday 7:00 p.m.
145.31 SPRC 2 meter Net Wednesday 7:00 p.m.

HF NETS

28.310 SPRC Friendly Net Wednesday 8:00 p.m.
3.860 Minnesota State Phone Net Noon and 5:30 p.m. daily
3.860 Minnesota ARES Net 6:00 p.m.
3.710 Minnesota Slow Speed CW Net 6:00 p.m. daily
3.605 MN State CW Traffic Net 6:30 p.m. and 9:50 p.m. daily
3.925 MN PICO Net 9-Noon Mon-Sat, 3-5 p.m. Mon-Fri

ST PAUL RADIO CLUB REPEATER KØAGF 145.31 – 600 Open access no tone

ST. PAUL RADIO CLUB VOLUNTEERS

President	Orcena (Orcy) Lyle	WØQT	612 827-2707	president	To send email to these club volunteers, use the prefix listed followed by an at-sign and "stpaulradio.org" (note: The word "club" is not included)
Vice President	James Klassen	KBØUAZ	651 451-8612	vp	
Treasurer	Allan Klein	WØONLY	651 291-8815	treasurer	
Secretary	Dale Maroushek	NØPEY	651 777-5309	secretary	
Board of Directors	Don Greenheck Skip Jackson Jeff Iverson	NØJPG KSØJ WB9DAN	651 483-1214 651 451-2313 763 560-4458	n0jpg ks0j wb9dan	
Membership Chair	Steve Huntsman	AAØP	952 894-3341	membership	
Membership Registrar	Skip Jackson	KSØJ	651 451-2313	registrar	
Call Trustee	Tom Sturm	NØBGO	651 699-4270	trustee	
Education Coordinator	Allan Klein	WØONLY	651 291-8815	education	
VE Exams	David Buending	AD2B	952 486-0836	ve	
Ground Wave Editor	Don Kelly	WA6ZMT	952 474-2766	editor	
Club Historian	Joe Zwirn James Klassen	WØXL KBØUAZ	651 483-4784 651 451-8612	historian vp	
Field Day	Ed Jacobson	WBØVHF	952 884-2335	fieldday	
Parliamentarian	Tom Sturm	NØBGO	651 699-4270	parliamentarian	
Annual Banquet/Picnic Coordinator	OPEN			banquetpicnic	
January Auction	Coordinated by the board			auction	
Refreshment Coordinator	OPEN			refreshments	
Skywarn	Dallas Fogg	NØLKD	651 644-2361	skywarn	
Door Prizes/Drawings	John Hunt, Chair Tom Bredemus	KGØJD KCØINP	651 647-1341 651 486-8852	doorprizes kc0inp	
Member Technical Assistance	Brian McInerney	NØBM	651 738-5932	technical	
Circuit Builders Chair	Jake Jacobson	NØIEZ	651 554-0441	circuitbuilders	
Friendly Net	Marty Gammel	KAØNAN	651 646-5428	friendlynet	
2 Meter Net	Andy Lokken	KCØTUD	651 224-5553	2mnet	
Repeater Committee	Joe Zwirn, Chair Tom Sturm Skip Jackson Keith Miller Joe Kreitzer Jeff Iverson	WØXL NØBGO KSØJ AGØH KCØJK WB9DAN	651 483-4784 651 699-4270 651 451-2313 651 777-0109 651 785-9402 763 560-4458	repeater trustee ks0j ag0h kc0jk wb9dan	
University of St Thomas Liason	Tom Sturm	NØBGO	651 699-4270	ustliason	
Webmaster	Orcena (Orcy) Lyle	WØQT	612 827-2707	webmaster	

DAKOTA DIVISION ARRL OFFICERS

Director	Jay Bellows	KØQB	651 222-7253	k0qb@arrl.org
Vice Director	Greg Widin	KØGW	651 436-8811	k0gw@arrl.org
Asst. Directors	Michael Siegelman Brian McInerney	KØBUD NØBM	612 542-8450 651 738-5932	n0oel@aol.com briann0bm@aol.com
MN Section Manager	Richard (Skip) Jackson	KSØJ	651 451-2313	ks0j@arrl.org

St. Paul Radio Club - Summary Calendar of Events

Fri Feb 1 7pm St. Paul Radio Club Meeting (see page 1)
Sat Feb 2 8am—6pm MN QSO Party. www.w0aa.org (see page 1)
Sat Feb 2 9am SPRC VE followed by EC Exams – Call David M. Buending AD2B, 952 486-0836, or ad2b@arrl.net for info
Fri Feb 8 7pm St. Paul Radio Club Board Meeting. University of St Thomas OSS 435 (4th floor lounge, across from elevators)
Sat Feb 16 9am St. Paul Radio Club Breakfast. Perkins Midway on University east of Snelling
Sat Feb 16 9am—1pm Cabin Fever Reliever Hamfest, St Cloud ARC. www.w0sv.org.
Sat Feb 16 11am SPRC Circuit Builders. University of St. Thomas OSS 415*
Sat Mar 1 9am SPRC VE followed by EC Exams – Call David M. Buending AD2B, 952 486-0836, or ad2b@arrl.net for info
Fri Mar 7 7pm St. Paul Radio Club Meeting
Fri Mar 14 7pm St. Paul Radio Club Board Meeting. University of St Thomas OSS 435 (4th floor lounge, across from elevators)
Sat Mar 15 9am St. Paul Radio Club Breakfast. Perkins Midway on University east of Snelling
Sat Mar 15 11am SPRC Circuit Builders. University of St. Thomas OSS 415*
Sat Mar 29 8am—1:30pm Midwinter Madness Hobby Electronics Show, Buffalo MN, Robbinsdale ARC. www.k0ltc.org.

* Check the SPRCCB Yahoo group or contact Jake at [circuitbuilders \(see page 7\)](#) to confirm CB schedule.

NOTE: The dates listed above for VE exams are the usual session dates for each VE team; occasionally sessions are canceled or changed. We urge our readers to call the contact number to confirm the test time, place and space.

The calendar is provided as a service to our readers; the St. Paul Radio Club is not responsible for errors or omissions.

To list your general interest amateur event in the calendar, contact the editor. Priority given to SPRC events, area events and national/international events in that order, space permitting.

St. Paul Radio Club Meeting
Friday February 1st — UST Room MHC 155 (see page 1)

ADDRESS CORRECTION REQUESTED

St. Paul Radio Club, Inc.
P.O. Box 9375
North St. Paul MN 55109

