



Metro Skywarn



Editor: Dave Johnson, NØKBD

Spring 2008

Safety First: Spot from Home After Dark

Upgrading Your Skywarn Participation

By Dave Johnson, NØKBD,
Newsletter Editor and Vice Chair of Metro Skywarn



We all have the distractions of family and career that keep us from other activities. The privilege of an Amateur Radio license brings with it an obligation to give back to the community. Skywarn is one of the most valuable services an Amateur can provide.

Since Skywarn began in 1970, deaths due to tornados have fallen by two thirds. Fatalities in the hundreds are now in the tens. Certainly, the National Weather Service deserves considerable credit. One of the successful methods they have used is Skywarn. We can be proud of our success.

But challenge grows. Population is more concentrated than ever before. People are busier than ever and away from their regular media sources. Providers of weather information have been keeping up with weather bulletins via email or text to cell phones, and PDA web pages for radar. Metro Skywarn has been working to keep up with the challenge.

Here are some ideas to upgrade your spotter participation:

1. If you are not yet a Ham Radio operator, get your license and fully participate in our live radio based notification system, what we call a "net". There is nothing faster or more efficient than Amateur Radio to get accurate weather information from beneath the storm to the National Weather Service. See <http://bbs.metroskywarn.org/viewtopic.php?p=420> for more details on upcoming classes and Ham license exams. One class is listed on page 6 in the newsletter.

2. Get continuous updates about severe weather wherever you are. Carry a handheld weather radio with SAME county by county notification. Next best is to carry an Amateur HT with the weather frequency programmed into memory so it can be checked regularly. You can get severe weather updates and net activation notices via email to your wireless device and your home or work computer.

2008 Metro Skywarn Class Schedule

If you didn't train last year, it's time to train again. Of course, you are welcome to retrain every year if you wish. Please check the website for any last minute changes to the schedule.

Go to: <http://www.metroskywarn.org/sked.html>

3-1-08 Sat 9am – 1pm
Stillwater Amateur Radio Assoc.
Boutwell's Landing
(Behind Menards On Hwy 36)
3600 Norwich Pkwy
Oak Park Hights, MN
Joe Heitzinger , Kc0oio At Arrl Net
651-698-6700

3-1-08 Sat 9am - 1pm
Twin Cities Repeater Club
Open Circle Church
2400 Highland Dr.
Burnsville ,MN.
Jeff Goodnuff , W0kf At Tcrrc.Org
952-927-0201

3-8-08 Sat Noon To 4pm.
Anoka County Radio Club/ARES
Blaine City Hall
10801 Square Dr.
Blaine,Mn.
(Radisson Road And 109th Ave.)
Mark Stack Room (Main Entrance South Side Of Bldg)
Dave Runkle Kc0kep At Arrl.Net
763-784-4384

3-8-08 Sat 8am To Noon
Twin Cities Fm Club
Golden Valley Safety Center
7800 Golden Valley Road
Mike Sigelman 763-542-8450
N0oel At Aol.Com

3-15-08 Sat 9am To 1pm.
St. Paul Radio Club /St.Thomas Radio Club
University Of St. Thomas
Murray - Heric Campus Center
(Off Cleveland)
(For Directions See Www.St.Paulradio.Org
Dallas Fogg 651-644-2361 Dfogg At Sccl.Net

3-17-08 Mon 6 Pm To 10 Pm.
Radio City
2663 County Rd I Mounds View, MN.
REGISTRATION REQUIRED
Seating For 20 Only
Dan Fish 763 -786- 4475
Radiocity At Skypoint.Com

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POSITIONS AVAILABLE:

NWS Radio Operators - The National Weather Service is looking for weather wise Amateur Radio Operators in the Mpls/St.Paul area to take a major role in Skywarn Nets. The Net Operation Center at the National Weather Service Field Office in Chanhassen is looking for Amateur Radio Operators with flexible hours to work during severe weather events in Central Minnesota and Western Wisconsin. Contact KØMPX Coordinator John Wetter at 763-494-3874 or mpx-hams-at-wxchaser.com.

Golden Valley Net Operations - at the Golden Valley Public Safety Building, sponsored by the Twin Cities FM Club is looking for Amateur Radio Operators with flexible hours to work during severe weather events in the Metro Area. Contact Tim Arimond at 952-593-9641 tarimond-at-aol.com.

Committee Members - We need more active members participating in the operations of Metro Skywarn. Expectations should not exceed more than two meetings a month and a few hours working on the task at hand. The Board wishes to form standing committees to work on: Newsletter, Spotter Appreciation, Spotter Notification, Organization Collaboration, Public Relations, Fund Raising, and Club Affiliation. To apply, please contact Dave Johnson NØKBD at 763-421-3242 n0kbd-at-arrrl.net.

Instructor Trainees - We are looking for new volunteers to help out with training and if you have some background in weather observations, a history that includes teaching, or have been a Skywarn participant for a number of years, and want to take on the challenge of teaching Metro Skywarn classes, we want to hear from you! To apply, please contact Dave Johnson NØKBD at 763-421-3242 n0kbd-at-arrrl.net.

Metro Skywarn Weather Trainers Needed

By Kevin Huyck, KB9WOB

Thank you for your participation with Metro Skywarn. The reports that are provided are vital in supporting the mission of the National Weather Service in it's goal of protecting the life and property of the public by providing severe weather watches and warnings in times of hazardous weather.

An integral part of this process is the training of new Skywarn spotters and orienting them with Metro Skywarn operational

Thank You

By Todd Krause, KBØSGH, Warning Coordination Meteorologist, National Weather Service Field Office, Chanhassen, MN



On behalf of the National Weather Service, I want to thank every spotter for their service protecting the public. Real-time reports are given to our warning forecasters, enabling us to relay your information to public safety officials, the media, and citizens. People are more likely to seek shelter if actual storm reports are included in the warning or follow-up statement, so your reports really can help save lives. For that, we thank you very much. I recommend that you to take a spotter class so you can identify which cloud formations are important and potentially severe, as opposed to those that are just "scary looking." And if you have any comments or concerns about Skywarn, please feel free to contact me at todd.krause-at-noaa.gov.

procedures and information on how to participate with the Nets. I'd like to say a hearty "Thanks" to all the instructors that helped us out last year with conducting the Training. Your efforts do not go unrecognized and unappreciated! In fact, without the support of the volunteer Instructors, we would quickly be outpaced by the instructional tempo that we wish to maintain.

Each year Metro Skywarn is asked to provide additional classes and training sessions, sometimes to support a local amateur radio club, other times for private organizations. Either way these additional requests for classes put an additional strain on our volunteer Instructors. We have met the challenge well, but we are beginning to see signs that the number of requests we're receiving are outpacing our recruitment of new Instructors.

We are always looking for new volunteers to help out with training and if you have some background in weather observations, a history that includes teaching, or have been a Skywarn participant for a number of years, and want to take on the challenge of teaching Metro Skywarn classes, we want to hear from you! Please visit http://www.metroskywarn.org/cgi-bin/contact_form.pl and send us a note. Make sure to include "Instructor" in the subject field. Or contact Dave Johnson NØKBD at 763-421-3242 or email at n0kbd-at-arrrl.net.

Metro Skywarn Board of Directors

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Howard Nelson	WTØH	Bloomington NCO Representative	Howard.l.nelson@gmail.com

Using GIS in spotter operations

By: John Wetter KØWDJ, MPX Skywarn Coordinator



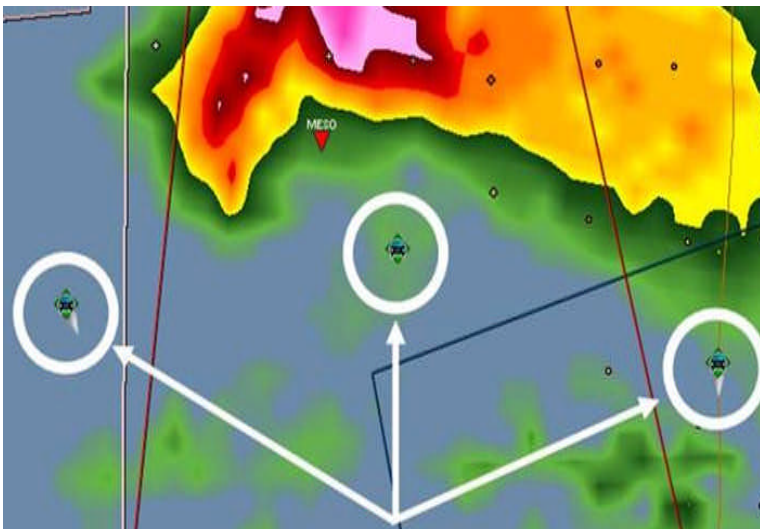
Geographic Information Systems (GIS) have become a mainstay in modern living. No longer are maps laid out and courses drawn on them, but Global Position Systems (GPS) and mapping software lay down a course to follow. From taking a trip to navigating the downtown streets and rural section roads, GPS and modern GIS mapping software suites have allowed us to leave the maps behind, and instead know where we are at all times.

Amateur radio enthusiasts know that one of the more popular uses of GIS in our ranks is APRS (Automatic Position Reporting System). WinAPRS and UIView are great examples of GIS software with an amateur radio focus. Of course, this is a Skywarn newsletter right? So, how does this apply to Skywarn?

Enter the Spotter Network. That is, <http://www.spotternetwork.org>. Spotter Network is a system that allows for real-time tracking of spotter locations via APRS or the internet. With the prevalence of easy internet connectivity for phones and laptop computers in the Twin Cities metro area, and also having a number of people using APRS around the metro, it seems to me that it's obvious to put the two together and use it to help enhance the Metro Skywarn spotting network.

In 2008, Metro Skywarn NCS's will begin monitoring SpotterNetwork information through GIS based weather applications for location information on spotters that choose to participate by joining the Metro Skywarn network through the SpotterNetwork website. Once you sign up for the network, Metro Skywarn net control stations will be able to see an approximate distribution of spotters in the metro area. Instead of causing more radio traffic on the main Skywarn frequencies just to find out where spotters are, Net Control operators can instead check where spotters are in relation to storms all in one shot.

So, how can you get involved? It's pretty easy really. First, you will need one of the following setups to participate:



- If you are a mobile spotter, you need to have a GPS unit so your position updates as you move. If you are spotting from home, you need to know your GPS coordinates in decimal format to enter into the software one time. Your GPS must support NMEA output. A mobile internet connection is needed if you are mobile, otherwise a standard home connection will do if you are at your home only.
- A cell phone that supports GPS and runs Windows Mobile, some Java phones, Blackberry phones, and some other select phones (explained later).
- An APRS setup that can transmit a custom remark tag (this does mean some older 'dumb' trackers are not compatible). This includes many of the mobile radios that have APRS capabilities built-in, and most recent tracking devices that allow you to program a remark into your transmissions.

Now, let's go over how to get started with any of these setups.

All of the above methods involve first visiting www.spotternetwork.org and signing up. I suggest using your call sign for your user name as you know it will be unique and it will also make it easy to identify you. Once you sign up, you can visit your 'My Details' page and fill out your SpotterNetwork profile. You'll see that you've been given a unique spotter ID consisting of numbers and letters. You'll need this if you install the client.

On this page, you'll see the many options you have. The most obvious is to just fill out your name and contact info, and then what info you'd like to be public (Don't forget to change your password to something you can remember too!). You can see many more options below, and those all depend on how you are getting info into SpotterNetwork. There is a quick tutorial here: <http://www.spotternetwork.org/support/demos/signup.swf>

One important step is then to click on 'Networks' near the top of the page and then click on the red 'X' next to 'Metro Skywarn'. This will join you to the Metro Skywarn Network. Now, no matter how you get your location information in to SpotterNetwork, you will be listed and available to Metro Skywarn net control operators. Not taking this step means your data will NOT be displayed for us during a net! Help us help you, sign up for the Metro Skywarn Network!

If you are using the SpotterNetwork client, or another GIS based weather client, then you don't need to fill out anything more on the info page. Your location will automatically be put in to the system from either a GPS unit, or by the numbers you manually enter. This is the easiest way to enter the SpotterNetwork. The next easiest way is via APRS. On the 'My Details' page, select "Track me with APRS". Then, enter your callsign as transmitted without the SSID. Next, you will need to add a comment to your transmission. The comment is: !SN! The page has details on how to enter this information into many of the popular radios, APRS software, and trackers available. Be sure to only turn on this comment when you are actually spotting, or you will appear to always be available as a spotter which can lead to wasted bandwidth, and general headaches for Net Control operators trying to contact you when you aren't listening!

The 'My Details' page also has another option for getting your location to SpotterNetwork. Using GPSGate you can report your

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position from a number of handheld mobile devices. There may be a small cost involved for the GPSGate software, so that's up to you. But still, this is another neat option for the techies out there.

Why do this?

The reasons are many, but the most obvious is that this allows Net Control to instantly see where spotters are without the need to poll for locations.

Does this change how I make a report?

No! You still make a report over the radio as you always have. This merely allows your location to be known without you needing to say anything. While the SpotterNetwork client does support you making a report directly though it, this uses the eSpotter system which is only for low priority reports. Please do not use this when you have ham radio available. Ham radio is still the fastest, most efficient means of getting your actual report to the National Weather Service.

How much does all of this cost?

It's free to get an account with SpotterNetwork. Of course, to have all of the equipment to actually use it can cost a decent amount of money, depending on your setup. However, if you're already using much of it, then why not? If you only spot from home, it's an easy way of showing net control when you're available and doesn't cost anything.

Do I have to do this?

No, you definitely don't have to do any of this. This is merely a way to help net control in finding locations of spotters quickly. But for those who do have the means, or are already using some of these pieces, it can make the life of a net control operator a little easier.

How can I use this data?

There are numerous ways to access the data from SpotterNetwork. First, you can go to the SpotterNetwork.org website and click on 'National Activity'. This shows a map of spotter locations around the country as well as recent reports from the NWS. It's based on Google maps, so you can zoom in and out on the image. Another way is, you guessed it, through GIS weather applications! The National map has the links at the top that you need for various applications. One free one to try is Google Earth. You can layer SpotterNetwork and NWS radar in Google Earth for free. If you're willing to spend some money to get a nice weather application, I'd recommend GRLevel3, from Gibson Ridge Software at: <http://www.grlevelx.com/grlevel3/> or, StormLab, from <http://www.interwarn.com> or, SwiftWx from <http://www.swiftwx.com> Any one of these will get you SpotterNetwork integration.

Metro Skywarn is now taking the lead in offering you a way to automatically report your position during severe weather. Take a look if any of these setups will work for you and if they will, join the SnotterNetwork!

See http://metroskywarn.org/message_service.html. Or you can set <http://metroskywarn.org> as your home page on your browser. Here is the standard email addresses for SMS to your cellphone. Standard text message rates apply! The 'number' field is your phone number with no dashes.

AT&T: number@txt.att.net

Sprint: number@messaging.sprintpcs.com

Nextel: number@page.nextel.com

T-Mobile: number@tmomail.net

Verizon: number@vtext.com

If you have trouble verifying your email address for the Mailman Listserv via SMS to get subscribed, don't worry. I get notices of subscriptions, and will watch for these addresses subscribing and provide assistance.

3. You can also get radar to display radar and spotter locations to your internet enabled Pocket PC or your laptop mounted in your car. Sign up at <http://www.SpotterNetwork.org>, enter your home location and join the MSW spotter list and net control will know you are spotting live-time. John explains more on page 3.

4. With GPS and an APRS transmitter, you can also participate mobile in SpotterNetwork.org, and keep net control updated on where you are located. See John's article on page 3. All you need is an APRS enabled packet TNC and a 2m rig for your car. As an alternative, check out the simple inexpensive kits at <http://www.byonics.com/>. John explains an alternative to APRS on page 3.

Once a month, TwinsLAN sponsors a packet radio workshop to help local hams set up for most any radio project. Bring your equipment in and Doug NONAS can check it out on the fancy electronic equipment and many people can coach you on the basics right down to setting up your APRS equipment. We'll get Doug to post the schedule of the TwinsLAN workshops to SWI nfo mailing list. See: http://metroskywarn.org/message_service.html.

5. Set up an APRS supported weather station at your home and report your weather to the NWS and other spotters. For an introduction to APRS Weather Stations see: <http://www.crh.noaa.gov/bis/aprs.php>. Check for progress in our implementation of SpotterNetwork and APRS at: <http://bbs.metroskywarn.org/viewtopic.php?t=48>. Post your own progress and ask questions there as well!

6. Bring your HT to work or as you putz around the house. Set up your mobile rig in your car or home to cross-band repeat to be sure your HT can break through to the net in torrential rain and continuous lightning static.

7. Find your spotting partners by posting in advance at Metro Skywarn Bulletin Board (MSW BBS) at <http://bbs.metroskywarn.org>.

8. Share your favorite spotting locations around town on MSW BBS. Share some safety tips about spotting mobile during rush hour in the urban jungle.

9. Share your spotting story and post any pictures and vid-

NWS Skywarn Operations for 2007

By John Wetter, Coordinator of Skywarn Operations
and Jim Richardson, Lead Forecaster

2007 ended up being a fairly active severe weather season, but without many high profile events, and almost completely void of tornadoes. There were only three tornadoes in the 51 county area that we serve in 2007, two of them being in Minnesota. There were only 18 tornadoes in Minnesota, the fewest since 1990 when there were 12. The wind and hail get most of the headlines this year. A couple of the events were difficult to forecast, with potential for capping in the mid levels of the atmosphere. This also caused some uncertainty in timing of staffing the NWS desk and spotter network activation. A brief synopsis of those events are presented below.

The year was off to a late start with the first sizable event being right in the Twin Cities on May 23rd. A downburst caused wind damage in the Plymouth area and there was a brief tornado south of the cities in Goodhue County.

In June, we had a few activations, mostly again for hail and winds in Wisconsin. On June 20th, we had a fairly active day with some very large hail just west of the Twin Cities. In Wright County, a funnel cloud was reported, but a tornado never did touch down with this storm. Hail from 1-3" was common with this storm as it tracked south out of Wright County. A separate storm in Chisago County also produced hail estimated up to 4.25" in diameter causing widespread damage.

July 8th was one of the events that was affected by an initially strong cap. The storms were mainly large hail producers, that developed in central Minnesota roughly between Buffalo and St. Cloud, and eventually moved through parts of the Twin Cities and on into Wisconsin. Some wind was reported in Wisconsin. The storms developed just north of a strong cap. The first warnings were issued before the initial watch was issued by the SPC. After the first warning, quick coordination between the NWS Skywarn team and NWS forecasters allowed for timely activation of operations. One of the larger storms in Wright County was showing some weak rotation on radar. However, based on a timely report of a non-rotating wall cloud from a storm chaser, and generally weak environmental conditions for tornados, no tornado warning was issued.

August was again a busy month, keeping with a trend from the last couple years. The late events remind us that spotters need to stay vigilant throughout the summer as a quiet spring does not necessarily mean that the whole summer will remain quiet. August 13 had all of the markings for a severe weather day for a few days in advance. The Storm Prediction Center had much of Minnesota in a slight risk 3 days out and upgraded to a moderate risk in the late morning of the 13th. The main severe weather threat that materialized out of this system was two successive bow echoes that moved into the Twin Cities from the Northwest. There was very large hail over much of the northern metro area and extensive damage occurred in St. Croix County Wisconsin where at least 109 homes and 48 barns were damaged from severe winds estimated to be up to 90mph.

August 18th and 19th were marked by disastrous flooding in Southeastern Minnesota. Many roads and bridges were taken

out by fast moving water as totals over 5 and even 8 inches were common. The state record for 24-hour rainfall was also handily toppled in Hokah, MN, where 15.10" of rain fell. This is now the top mark for the state of Minnesota in the 116 year history of co-op observations in the state.

Another severe weather situation with an initially capped environment was in place during the State Fair on Aug 28th. Severe weather staffing, including the forecaster warning teams and the Skywarn operators, was in place at Chanhassen by afternoon. The cap held well into the evening but a complex of thunderstorms developed in the very early morning hours over southwest Minnesota. This complex became severe and packed damaging winds along a line from Redwood Falls into the Twin Cities and western Wisconsin. This type of scenario is not uncommon with the cap breaking at night and storms becoming severe, showing that spotter networks need to stay abreast of the weather situation at night, as severe weather ingredients may still be in place from the late afternoon or evening.

September also made a comeback with a tornado in Woodbury on September 20th, combined with a widespread wind event over much of the southern and central metro area.

The National Weather Service operations now turn our attention to 2008 and working with spotters in Western Wisconsin as Metro Skywarn has turned over reporting responsibilities to the local counties. The NWS will continue to work with these counties to ensure that severe weather reports make their way quickly and efficiently to the forecasters at the NWS. The hub and spoke system has proven itself over three seasons now and we can continue to fine-tune our operations while working with local spotter groups as well as Metro Skywarn.

If you are interested in helping with radio operations at the National Weather Service, please contact John Wetter at mpx-hams-at-WxChaser.com or via phone at 763-494-3874.

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eos you may have taken there as well. Your picture or video could be featured in next year's Skywarn training!

10. Start regularly attending Metro Skywarn Board meetings. The Board is forming standing work committees to help us implement SpotterNetwork, APRS, and other new projects. Committees will also be working on writing a better Newsletter, creating regular spotter appreciation events, find creative ways to improve and deepen spotter notification, building mutually beneficial links through organizational collaboration, building a top notch public relations team. Then of course we'll need a stronger fund raising effort to pay for all this creativity! The Metro Skywarn Board needs your regular attendance and participation in our board and committee meetings. We need your help!

Metro Skywarn is a dynamic organization powering it's way into the future with creative initiatives! Join us and upgrade your spotter and community service participation with an organization that saves lives every year!

Check Those Backup Options! August 11, 2007

By Bruce Schmedlin KCØTPV



Remember those two activations on Saturday, August 11, 2007? Ever wonder what went on behind the scenes at Skywarn Net Control that morning? Would you have been able to get your report through? Only if you paid attention and had your backup frequencies programmed into your radio could you keep up with this fast-moving high-end event.

01:30 Weather Alert at home sounded for a Severe Thunderstorm Watch until 06:00

Hail to 2 inches, Wind gusts to 70 mph; Severe MCS moving east across central MN. Isolated large hail and damaging winds will be primary threats, with wind damage threat more pronounced if activity aligns along common outflow. Okay, so that one sounds not too bad. Go back to bed.

02:30 Phone call -- Chanhassen wants us to come in and activate Skywarn

02:58 Operators arrive at Skywarn NCS and power up the equipment. Status: 147.21 fully operational
Link radio -- Checked in and advised Chanhassen we were about to go live. Chanhassen informed us they had issued a Severe Thunderstorm Warning at 02:45 for 60+ mph winds in western Hennepin County. Numerous power outages reported. Wright County 147.000 is off the air. Flash Flood Warning for most of Twin Cities Metro issued 02:58 until 06:00. 146.85 no squelch tail or tones

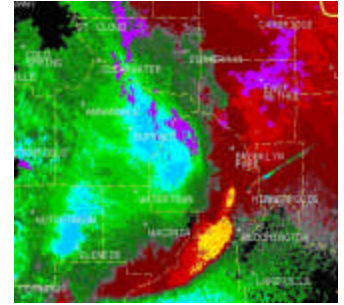
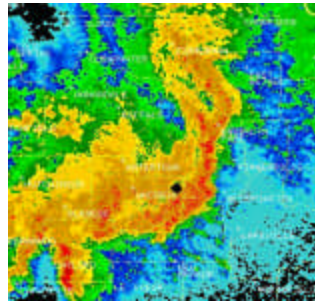
03:05 Chanhassen asks why we've not gone live up north; we explain the situation.

We need to select a backup repeater, knowing we had no western coverage from Wright County, with storms moving through at 45 mph. The 146.76 repeater at Hwy. 169 and 394 should be in a good position. However, we got no squelch tail or tones. Anoka's 146.67 should be in a good position for the storms. It's stuck on transmit.

03:10 Chanhassen called again for when we'll have north coverage.

03:15 We tried the 147.12 repeater at 3M to stay in front of these fast storms. We're in luck and inform Chanhassen that we're using the 147.21 south and 147.12 north. This is announced on both repeaters, and we also transmitted on the 146.85 output frequency to push reports to the 147.12.

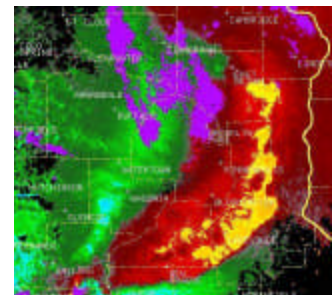
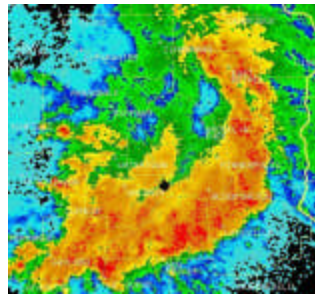
03:22 Radar reflectivity shows Flying Cloud Airport in Eden Prairie was receiving 70 mph winds, shortly before significant wind damage in Bloomington. Doppler velocity shows 70+ mph winds; dark orange in Bloomington nearing 90 mph.



03:30 Power failed at NCS, and emergency power kicked in. Radios needed to be reset to our frequencies. Copper cladding just got ripped off our building.

03:35 We can hear Chanhassen on the Link Radio but they can't hear us. We use the backup land line for reports received for the remainder of the net.

03:43 St. Paul and Eagan received significant wind damage. Winds estimated 80 mph.



To provide coverage for this event, we had to try three of our four pre-designated backup repeaters, operate on backup power, and use the backup land-based phone line to Chanhassen. We received reports from spotters impacted by the storms in their homes, including one who had a tree branch in his bedroom.

Spotters found us on the backup frequencies printed on the backs of their cards. This was the first of several times in 2007 that we used backup repeaters, and we even had a few minutes during one event where we could reach neither primary repeater. How prepared are you to find the net?

SARA Offers Ham Radio Class March 6th

Stillwater Amateur Radio Association (SARA), which will also be offering a free class to obtain the Technician ham radio license, beginning on March 6, the week after their Skywarn class. These classes will be held at Courage St. Croix in Stillwater (see www.radioham.org for directions). Classes will run for approximately 10 Thursdays, and finish with a test session to obtain the license. Anyone with questions concerning these classes is encouraged to communicate with either KØGW or WØXB at their arrl.net e-mail addresses.

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3-26-08 Wed 6 Pm To 10 Pm.
SMARTS
Carver County Gov Center
Chaska , MN.
Audrey Zellman 952-466-5852

4-05-08 Sat 8 Am To Noon
Bloomington Emergency Communications
Fire Station #1
10 West 95th Street
Bloomington, MN.
Gene Clemens 952-831-3089
Scoutgc At Earthlink.Net

4-12-08 Sat 8:30 Am - 12:30pm.
North Hennepin Community College
CCE Bldg
7411 85th Ave N.
Brooklyn Park ,MN.
Intended For The General Public - \$10 Fee
(Registration Required)
(Class Subject To Cancelation If Not Enough People Registered)
Jamie Borotski 763-424-0880

4-14-08 Mon 6 Pm. To 10pm.
Radio City
263 County Road
Moundsview, MN.
Dan Fish 763-786-4475
Radiocity At Skypoint.Com
(Registration Required)
Seating Only For 20

4-16-08 Wed 6pm. To 10 Pm.
Robbinsdale Amateur Radio Club
Robbinsdale Public Safety Center
4101 Hubbard Ave. Robbinsdale, MN.
Jim Hammock Ke4edt At Arrl.Net

4-19-08 Sat 11am. To 3 Pm.
Ramsey County Emergency Mgmt & Homeland Security
Roseville City Hall
2660 Civic Center Dr.
Roseville, MN.
Bill Hughes 651-266-1016
(Please Leave Message)
William.Hughes At Co.Ramsey.Mn.Us

4-24-08 Thur 6 Pm. To 10 Pm.
Ramsey County Emergency Mgmt & Homeland Security
Roseville City Hall
2660 Civic Center Dr.
Roseville, MN.
Bill Hughes 651-266-1016
(Please Leave Message)
William.Hughes At Co.Ramsey.Mn.Us

5-1-08 Thur 6 Pm. To 10 Pm.
Ramsey County Emergency Mgmt & Homeland Security
New Brighton Dept Of Public Safety
(North Entrance)
(3 Floor Training Room)
785 Old Hwy 8 NW, New Brighton,MN.
Bill Hughes 651 -266 -1016
(Please Leave Message)
William. Hughes At Co.Ramsey.Mn.Us

5-3-08 Sat 11am .To 3 Pm.
Ramsey County Emergency Mgmt & Homeland Security
New Brighton Dept Of Public Safety
(North Entrance)
(3rd Floor Training Room)
785 Old Hwy 8 NW. New Brighton , MN.
Bill Hughes 651- 266 -1016
(Please Leave Message)
William.Hughes At Co.Ramsey.Mn.Us

5-3-08 Sat 9 Am To 1 Pm.
SEMARC
Fire Station #2
8641 80th Ave
Cottage Grove, MN.
Dennis Ackerman 651-769-0358
Kb0oqq At Arrl.Net

5-8-08 Thur 6 Pm To 10 Pm.
Ramsey County Emergency Mgmt & Homeland Security
New Brighton Dept Of Public Safety
(North Entrance)
(3rd Floor Training Room)
Bill Hughes 651-266-1016
(Please Leave Message)
William.Hughes At Co.Ramsey.Mn.Us

5-10-08 Sat Noon To 4 Pm.
Anoka County Radio Club/ ARES
Blain City Hall
10801 Town Square Dr.
Blaine, MN.
Radisson Rd And 109th St.
(Mark Stack Room)
Main Entrance South Side Of Bldg
Dave Runkle 763- 784- 4384
Kc0kep At Arrl.Net

5-10-08 Sat 11 Am To 3 Pm.
Ramsey County Emergency Mgmt & Homeland Security
White Bear Lake PD (Training Room)
(North Entrance Of Police Dept)
4701 Hwy 61 , White Bear Lk, MN.
Bill Hughes 651 - 266 -1016
(Please Leave Message)
William.Hughes At Co.Ramsey.Mn.Us

5-15-08 Thur 6 Pm To 10 Pm.
Ramsey County Emergency Mgmt & Homeland Security
White Bear Lk PD
(Training Room)
(North Entrance Of Police Dept)
4701 Hwy 61, White Bear Lk, MN.
Bill Hughes 651 -266 -1016
(Please Leave Message)
William.Hughes At Co.Ramsey.Mn.Us

5-17-08 Sat 11 Am To 3 Pm.
Ramsey County Emergency Mgmt & Homelane Security
White Bear Lk PD (Training Room)
(North Entrance Of Police Dept)
4701 Hwy 61 White Bear LK, MN.
Bill Hughes 651-266-1016
William.Hughes At Co.Ramsey.Mn.Us

6-14-08 Sat 9 Am To 1 Pm.
Twin Cities Repeater Club
Open Circle Church
2400 Highland Dr.
Burnsville, MN.
Jeff Goodnuff 952-927-0201
W0kf At Tcrc.Org

TRAIN. EQUIP. CONNECT.

Minnesota Skywarn Workshop Saturday, April 5, 2008

Planning for the 3rd Annual Minnesota Skywarn Workshop is well under way. The workshop will be held on Saturday, April 5, 2008. Our keynote speaker this year will be **Tim Marshall**, renowned severe weather expert specializing in tornado damage assessment. Tim was a member of the group that developed what is now the Enhanced Fujita Scale, as adopted by the NWS in 2007. Tim will also speak about his experience as part of the Quick Response Team that evaluated the damage in Greensburg, KS; the first ever EF-5 tornado. This has been the only '5' rated tornado in the United States since

1999. Also during the workshop we'll take a look at challenges spotters may face in the field in Minnesota given our differing terrain, forested areas, and large lakes and how those factors must be a part of your 'spotter tool kit'. We'll also look at some of the new radar technology coming to the NWS, an interesting perspective on the March 29, 1998 tornado over southern Minnesota and look at dispelling the myth that large cities are protected from tornadoes due to the urban heat island. All of these topics, plus the latest in technology, spotter preparedness, radar interpretation and much more will be in store for the 2008 Minnesota Skywarn Workshop!

Please join us again as we look to Train, Equip, and Connect spotters from throughout the state and region. Registration is required to attend this workshop. More information can be found at:

<http://www.mnskywarnworkshop.org>

Address Service Requested

Metro Skywarn Inc.
853 Bradford Ave
Champion, MN 55316