MidWest Tracker

June, 2007
Inside This Issue

MidWest Trivia
What is a Derecho?
Answer on page 4

Upcoming Meetings

Dane County – July 16th
General meetings are held on the third Monday of every month at 7PM.

Rock County – June 27th
General meetings are held on the fourth Wednesday of every month at 7PM.

Welcome!
Dale Bernstein, President/CEO
MidWest 107

Allow me to start out with this is not so much a letter from the one president as it is an open letter to the members from a member, to our associates and to those who support MidWest in so many ways.

MidWest has indeed traveled a great distance within the past five years and the road is long and great before us.

From my early school days, I have always been fascinated with the many facets of weather this wonderful world supplies and at times challenges us with.

As each year went by, my interest in the severe aspects of weather grew. Often, I would awake in the early hours before class and view Mother Nature in her fury as a strong thunderstorm would roll in. Wondering how it worked, what were the causes, why here and not there -- so many questions.

Then as I recall, passing my drivers test and actually being able to travel to, from and yes within the storms -- I loved it! I quickly learned to respect Mother Nature. I learned that she can be violent at times and passive at others, she runs on her own schedule, not ours.

Plain and simple though, I was hooked. As I continued traveling to these storms, a need arose to explain cracked windshields and dented sheet metal on the family cars. Soon it was decided that I needed my own transportation, or should I say "hail magnate" as my folks called me.

Back in that day, I was flying by the seat of my pants. If I was in or near hail, I knew I was close to the action. The more I ventured into the storm's path the more I knew I simply had to know more. I had to become more informed and to become more educated. This would somehow help keep me safe. I had heard that there were groups and individuals that forwarded their observations so that others could be safer and more prepared for these storms. I wanted to be a part of this by supplying others with my observations too.

In those early days I saw first hand the serious need for a professional organization. One that could provide accurate up to date real time information, and gee, maybe even get into predicting, forecasting and being able to understand radar and more.

My first tornado was in Belvedere IL, and it was a rude awaking for such a young man. Although I had self studied on such storms, I had no idea or what I was prepared to witness. The destruction was complete. School buses tossed around like toys, cars flying through the air, a school building flattened, houses vanished, and worse of all, the loss of so many souls. I'll never forget that day, nor do I have any desire to, as it was the catalyst for my goal that there be a solid and professional organization that could make a difference, so that if at all possible, I would not see too many more days like that one of my first tornadic experience.

The Skywarn folks and other like organizations have been around a long time and do a superb job, but I saw a need for more. I saw a need for people to become involved in a separate organization, an independent organization, that would be able to work alongside of many agencies and other organizations, with the only goal of serving as many communities as possible.

I have had the great fortune to meet and work alongside of many fine people and I remain proud and fortunate to be associated with and work along side of so many fine folks today.

I have seen many a storm and many tornadoes. The F0's to the F5's, from hail makers to straight line wind events, to macro burst to mini's. Having seen the wrath of a hurricane, I still find myself fascinated with how much more I have to learn and understand.

That pretty much leads me to where we are now folks. Not in the 1950's, not the 60's, 70's, 80's or 90's. Here we are, the 21st Century, year 2007. Some of us have been around for some time, others are new, some are older, and some are younger. It matters not, for each time there is a storm, a MidWest meeting, our networking, our thrust and depth of knowledge is accepted and greeted with anticipation. MidWest relies on revolving training, real life experiences, and the sharing of knowledge as we remain such a professional organization.

We've all come a long way. From having to rely on those black and white small military radar screens, to now where we have almost real time radar on our laptops, having our own weather bases, having the great fortune of our now forecasters, radar interpreters, Manger's On Duty, Net Control Operators, Relay Operators, my goodness the list goes on.

The MidWest vision has transpired into multiple goals and accomplishments and is shared by many persons, agencies and organizations. Goals that are obtainable, not just pipe dreams. One of the greatest satisfactions is to have a vision, to share that vision, to have goals to reach and to meet, and to have goals that will be met with the assistance of those who are deeply committed in obtaining those goals and ideas.

MidWest has become one the most recognized, professional and respected organizations in the Midwest region and beyond. Our Memorandum of Understanding with Dane County Wisconsin, our working relationship with the National Weather Service, and with the many agencies and organizations that work with us on any given day, reminds all of us to stand proud, and continue to move forward.

As a side note, most of us know there have been a few cases of false reports to the NWS. I know this deeply concerns us all and has us shaking our heads in disbelief how anyone could do that. However, do

not let that or any instance shake your commitment or confidence level as you travel the roads with MidWest.

Many of our senior staff and members can attest to the fact that there are those who will speak ill of MidWest's accomplishments, of our goals, and of our professional procedures. Often, those persons strikeout in their lack of understanding and or ignorance of what MidWest is, what we do and above all, why we do it.

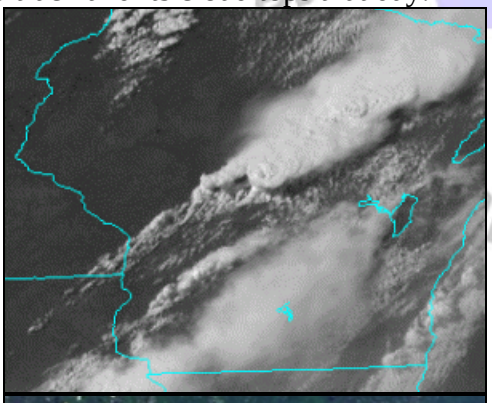
In closing, I wish to thank each and everyone of our staff, our associates, the supporting local, county, state and federal agencies and organizations, - yes and most of all, THANK YOU to the members of MidWest!

Forward and be safe, be knowledgeable.

db

Langlade County Tornado – June 7th
Tim Shriver, MidWest 122

On June 7th, Langlade County was hit by an EF3 tornado. Here are two pictures from the air of the tornado track and its cloud tops that day.



The Spotter Network
Steve Fitzsimmons, MidWest 136

Did you know that there is a web site you can go to that lets you visually display your location so net control can see you? It helps net control when they are looking for reports from certain areas. Here is the link… http://www.spotternetwork.org/

Did you Know?
Steve Fitzsimmons, MidWest 136

Wisconsin averages 40 thunderstorms and 21 tornadoes a year.

Lightening is 50,000 degrees, even hotter than the Sun.

One thunderstorm can contain over 17.4 million gallons of water (if 1" of rain falls over 1 sq. mile).

Count seconds between lightening flash and clap of thunder, divide by 5 to get miles from storm.

If you can hear thunder you are close enough to be struck by lightening.

All rain in thunderstorms start out as ice crystals.

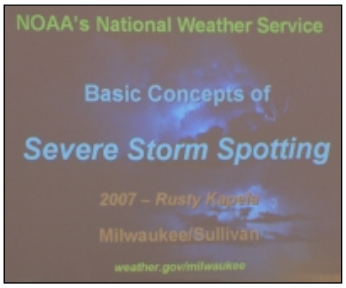
Rain droplets don't freeze until 14 degrees.

Straight line winds from severe thunderstorms can exceed 100mph.

Heat waves are #1 people killer, floods are #2.

Penny sized hail triggers a severe thunderstorm warning. Penny = ¾ inch. Winds 58+mph does also.

One in a Thousand
Steve Fitzsimmons, MidWest 136



Did you attend a recent spotter training class offered by the National Weather Service? If you did, consider yourself among the very elite. Even if we were able to double the number of people attending these classes, we would still be one in a thousand. An interesting stat shows this carries over nationwide. There's an ongoing need for people to help provide the ground truth the weather service needs. Thankfully they can rely on us! If you know anyone interested in the weather and who might like to join us in our efforts, please sign them up and join the elite, the one in a thousand!

Cold-air Funnels
Steve Fitzsimmons, MidWest 136

In May after a cold front passed through our area we were advised that we could see what's known as a "Cold-air Funnel". In fact, there were even a few sightings of these near Milwaukee. What is a Cold-air Funnel?

Meteorologist Jeff Haby states:
A cold air funnel is a high based weak circulation that occurs in a cool air mass. By high based it is meant it develops well above the earth's surface. Since it is high based and weak they rarely impact the earth's surface although they can look threatening. Unlike typical tornadoes, cold air funnels develop in a shallow cool air mass and often behind a cold frontal passage. The mixing of cool and windy conditions in the lower troposphere with air in the middle troposphere flowing in a different direction may spark the rotation that spins up the funnel. If the air is moist enough and rises enough the condensation funnel will be visible.
http://www.theweatherprediction.com/habyhints/329/

Derechos (MidWest Trivia Answer)

A derecho (pronounced "deh-RAY-cho") is a widespread and long lived windstorm that is associated with a band of rapidly moving showers or thunderstorms. It can be associated with a single bow echo or multiple bow echoes and contain straight line winds as high as 130mph.

Noctilucent Clouds
Steve Fitzsimmons, MidWest 136

Noctilucent Clouds (Night Shining) - Those cool looking wispy glowing blue/white clouds 50 miles high normally reserved to polar regions are being seen as far south as Colorado (40 degrees Lat) and becoming brighter and more frequent. The temps up where these clouds reside is a frigid -200 degrees. Best time to see them is from May through August. One theory about why we are seeing more of these and at lower latitudes states...

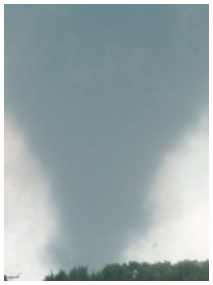
"The most plausible and leading theory is CO2 buildup, which causes global warming," Dr. Russell said. Increasing temperatures near the surface actually cause the upper part of the atmosphere to cool, and cooler temperatures could spur the formation of more clouds. "If that's true and we are changing the atmosphere in a remote location like this, that means we're changing the entire atmosphere,"

NASA recently launched a satellite to take a closer look at these clouds and to try and understand them better.

Some Dane/Rock County Forum Highlights
Please join MidWest on the forums for the latest news and alerts

6/14 – Heat Awareness Day
6/11 – False weather reports
5/9 – Sub-Tropical Andrea forms
5/8 – NOAA Weather Radio Day
5/8 – Article about spotters in paper
5/6 – Greensburg, KS EF5 tornado
4/12 – Mock tornado drill
4/2 – Spotter training event hosted by MidWest
3/29 – Tornado outbreak, 65 tornadoes hit heartland
3/26 – Tom & Kim Road Show (WORT FM) promoting upcoming training event
3/23 – Tim and Chad Road Show (WIBA AM) promoting upcoming training event

Special notes from the front office
Do you still need your MidWest ID? See Frank
Are your dues and MMF's up to date? Due Jan'07



Fake Weather Reports
Tim Shriver, MidWest 122

MILWAUKEE - Someone has been submitting fictional reports of severe weather to the National Weather Service, causing unnecessary alerts and frightening people. The areas affected have included Milwaukee, La Crosse, Chicago, and Lincoln, IL, said Tom Schwein, chief of the National Weather Service's systems and facilities division for the central region in Kansas City, Mo.

The person started sending reports in mid-April through an online form on the service's Web site.
"We've been detecting a regular pattern of a person who has been submitting false severe weather reports that are constructed in a way that seem very realistic," Schwein said. "Whoever this person is seems to have knowledge of severe weather reports."

Schwein said reporting false severe weather is like calling in a bogus bomb threat or unnecessarily pulling a fire alarm.

"People had to take cover, media interrupted their broadcasting for hours - we've alerted people unnecessarily and frightened them. This person has really misled us," Schwein said.

More than 25 false reports were submitted from the same computer over one weekend this month, and the service typically gets 40 to 50 a month from that source, Schwein said. It does not appear that any phony reports were sent during Thursday's severe weather, according to Pat Slattery of the Weather Service.

What Triggers a TVS on Radar?
Tim Shriver, MidWest 122

A TVS (Tornado Vortex Signature) is a Doppler RADAR alarm resulting from at least 45-knot outbound adjacent to at least 45-knot inbound radial velocity. The supercell must be reasonably close to the RADAR in order for the RADAR to trigger the TVS. If it is above the RADAR, the tornadic circulation is in the RADAR's cone of silence. If it is too far from the RADAR, the beam will overshoot the circulation. The optimum distance occurs where the beam can sample the mesocyclone (and possibly the actual tornadic circulation) with several tilt angles.

The NWS will often issue a tornado warning from RADAR evidence alone if the mesocyclone associated with the TVS is deep and persistent. Most of the strong and violent tornadoes have deep and persistent mesocyclones. If the tornadic circulation is in a favorable location to the RADAR (not too close or too far away), volume scans (through using various tilt angles) along with examining the output every 6 minutes can be used to assess the depth and persistence of the mesocyclone.

A TVS on RADAR does not necessarily mean a tornado is occurring. To be a tornado the circulation must be on the ground. The RADAR is not able to tell if the "tornado signature" is on the ground. Less than 30% of even strong mesocyclones produce a tornado. There is another "volume of silence" the RADAR has and that is the volume underneath the lowest tilt angle. If the lowest tilt angle is 0.5 degrees, the RADAR will be unable to detect anything that could be detected under 0.5 degrees (RADAR is only able to sample a planar area with each tilt angle). RADAR is sometimes taken out into the field during storm chases to collect data on the circulation that is near the ground for research purposes.

I thought this was a good explanation of what triggers a TVS to appear on radar.

The Role of the RFD in Tornado Development.
George E. Hrabovsky (MidWest 299)
President, Madison Area Science and Technology (MAST)

The Rear-Flank Downdraft (RFD) is one of the three primary surface wind patterns generated by the supercell thunderstorm. The other two are the Forward-Flank Downdraft (FFD) and the Inflow. It turns out that the RFD is significant to tornado formation, though the exact role played by it is still a mystery, and is the subject of ongoing research. Having said that, there are a few things that we do know, and a few things that we think we know.

It seems that the most likely explanation for the RFD is due to the persistent rotating updraft that exists at the heart of every supercell thunderstorm. As this rotation is carried upward and the normal processes of precipitation formation take place, downward moving air is a natural result. A large quantity of water descends towards the ground dragging air with it. Forward momentum (the tendency for forward movement to continue forward) provides for the FFD. Angular momentum (the tendency for things that are turning to keep turning) provides for the RFD, or so it seems. The truth is, the exact processes and interactions are still not fully understood. In a counterclockwise rotating storm, this will wrap around the backside of the thunderstorm from the north (assuming the storm is moving in an easterly direction).

As the RFD wraps around the back side of the storm it also descends to the ground. In an eastwardly moving supercell, this will result in an intersection with the inflow of the storm to the south/southeast. The angle of the intersection will vary with local conditions. If the angle is steep enough (close to ninety degrees) small vortices about a vertical axis will be generated called eddies. These can be drawn into the inflow region and generate a tornado. (For details see a previous newsletter). This is the simplest explanation for the role the RFD plays in tornado development.

Is it the only role? Perhaps not - the RFD intersecting the inflow can also result in a transfer of angular momentum into the updraft. This happens because whenever something turning hits something else, there is a transfer of angular momentum. Here the rotation of the updraft is drawn downward and some of it is transferred to the inflow. You might see cloud matter obtaining rotation about a horizontal axis in or near to a wall cloud. The transfer of angular momentum from the RFD to the inflow is one possible explanation for this.

Another aspect is the temperature of the RFD. A cold RFD will tend to cut off the inflow. The cold air is drawn into the updraft and begins shutting down the supercell updraft, and the storm begins to die out. A warm RFD will enhance the inflow and may actually assist in prolonging a storm. These two aspects are mysterious, as we do not have an exact relationship between the temperature of the RFD and tornadogenesis (the process of making a tornado). We only have tantalizing field data, though not in enough quantity to be certain that we understand what is going on.

To summarize, the RFD plays a role that is at once understandable and mysterious. We all know how to recognize the RFD; we can see the clear slot formed around the updraft by it. We can see the tops of thunderstorms begin to collapse on radar, or in the distance. We can even see the precipitation core rotate around the back of the supercell, forming the characteristic hook echo. Keep an eye on storms that have an RFD; while they do not guarantee tornado formation, they do add an ingredient to the mix.

Wednesday Night Nets!

Check-ins begin at 7pm on the Ham Radio side on 444.375 MHz. Test your equipment!

Then again at 7:30pm on the Business Band side on 451.275MHz. Practice your TLCS!

Amateur Radio Field Day Saturday June 23 – Sunday June 24.
Kevin Graniero, MidWest 124

The Four Lakes Amateur Radio Club will be operating its annual Field Day event this year at the Badger Prairie park in Verona, Wis. The park entrance is located off Nesbitt Road and Highway MV on the east side of Verona. For those new or even old-time hams who never attended this event, it is basically an exercise that demonstrates amateur radio's special capability to provide emergency communications in times of need. The club will have many operators come in and setup emergency stations running on emergency power, which is usually our big generator. This is an excellent chance for those new and/or old to the hobby to help setup antennas, stations and learn about the teamwork that is always needed to run a successful operation. We will begin setting up on Saturday morning probably after 9am or 10 am. We will start operating at 1800 UTC (1 pm.) on Saturday and go until Sunday 1800 UTC. In addition to the stations that are running, there will be a "GOTA" station also. That stands for Get On The Air. This is a chance for the newcomers to operate Field Day for the first time. Unlicensed persons can also operate this station as there will be a control op on duty.
There will be stations running cw and ssb at this time and possibly other modes. We will be making contacts with other clubs who are also working field day from their locations around the country. This is not really a major contest, but a chance to practice emergency communications and to have fun and enjoy yourself.

I am a fairly new member to the Midwest SSTRC group but have been involved in amateur radio for a very long time. Field Day has always been one of my favorite events. It gives me an excuse to drag my hf gear and antennas out to the field and to have fun while I brush up on the emergency communications that goes along with it.

I have noticed that many of the Midwest SSTRC members are now ham operators. I would like to invite everyone to stop out and see how Field Day works. I think everyone who has never experienced hf operating, using either cw or ssb will enjoy it very much. These are great modes in addition to uhf/vhf fm rigs that some of us are just used to.
John Steffl WZ9I is the club Field Day chairperson this year. His email is steffl1@charter.net. If any one has questions regarding Field Day please email me at KF9AQ@charter.net or call 608-273-0956.

Thanks and hope to see many Midwest SSTRC members stop by and check it out.
73,
Kevin Graniero
MW-124
KF9AQ

TLCS – Why we need it, why we practice it
Steve Fitzsimmons, MidWest 136

You may recall during one of our recent classes given by Rusty Kapela when he emphasized the need for everyone to use TLCS. TLCS stands for ***T****ime*, ***L****ocation*, ***C****ondition and* ***S****ource*. When he spoke about reporting from your location, remember what he said? You might know where your local grocery store is or bank or popular intersection is. But back at the National Weather Service we don't and must rely on the reference points. Reference points are issued by the NWS. When spotters report a severe weather condition, location always has to be given from a NWS recognized reference point or the report is of no help. Familiarize yourself with the reference points in your area and the next time you need to send in a report, you will be that much better prepared. Better yet, join us on the Wednesday night nets and practice using the TLCS format. It's also a great opportunity to test your radio equipment.

$ell/Trade/Buy/Barter
Do you have something to sell or are you shopping for a good deal? This is your spot! Just send me a note and I will include it below next month.

Radios for Sale
Frank Weisensel, MidWest 103

If you are interested in buying radio equipment, please write to me at freefallfrank88@juno.com and I will set you up with what you need.

Heat Awareness

Steve Fitzsimmons, MidWest 136

Heat waves are Wisconsin's number 1 weather related killer. To bring attention to this threat, Governor Doyle proclaimed that June 14th, be Heat Awareness Day.

The National Weather Service conducted a test last July to learn how quickly the interior of a car heats up when parked partially in the sun with all the windows rolled up. How hot do you think it got? Here are the results below.

Time	Degrees in Car	Degrees Outside
1245 PM	83	92
100 PM	120	93
115 PM	123	94
130 PM	125	93
145 PM	127	94
200 PM	129	94
215 PM	130	95
230 PM	131	95
245 PM	132	95
300 PM	133	95
315 PM	134	95
330 PM	134	95

A child or pet locked in a car under the full sun can die of hyperthermia within minutes. Heatstroke occurs when the core body temperature reaches 104 degrees F. A core body temperature of 107 degrees F is considered lethal.

So far in 2007… 9 children have died from being left in cars nationwide.
In 2006 ---------- 29 " "
Since 1998 --- 339 " "
(Source: http://ggweather.com/heat/)

Educational Opportunities
For information on training and certifications please visit the following web sites…
1. FEMA: http://training.fema.gov (ICS 100/700)
2. MAST: http://www.madscitech.org
3. JetStream: Online school for weather (NWS)
http://www.srh.noaa.gov/srh/jetstream/matrix.htm

MidWest SSTRC Inc. Mission Statement

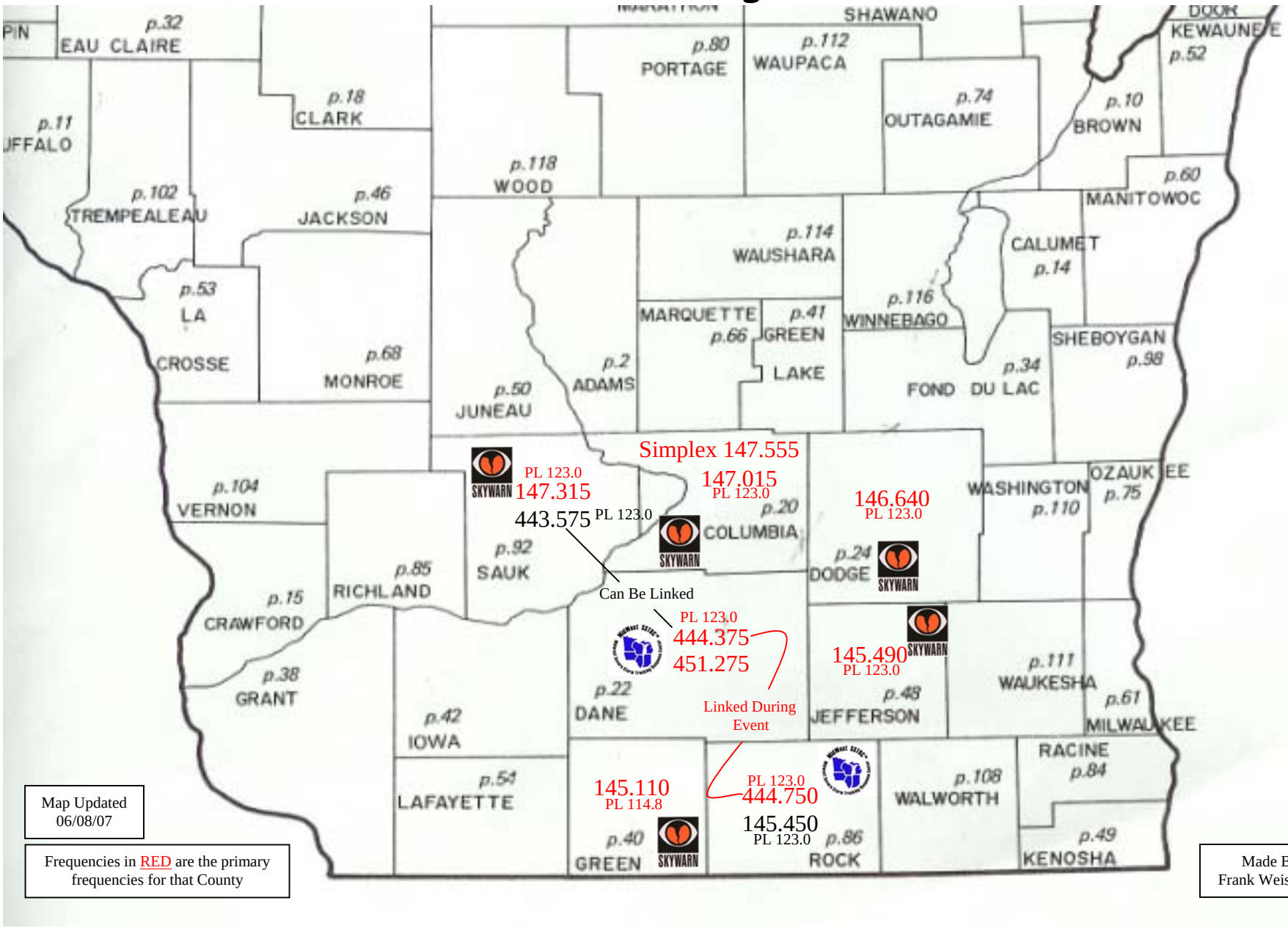
The MidWest Severe Storm Tracking/ Response Center (*MidWest SSTRC Inc.*) is comprised of members whose primary purpose is to assist in providing early detection of severe weather. We communicate this critical information to government officials, other recognized agencies and organizations including the National Weather Service allowing for timely public severe weather warnings and providing emergency response as appropriate.

MidWest SSTRC Inc. endeavors to assist in any way it can in the protection if life and property from any threat, be it natural or man made. MidWest SSTRC Inc. is a 501c3 Non-Profit Corporation

2007 Stats		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Dane	0	0	2	0	1	2						
	Rock	0	0	2	0	0	1						

MidWest Tracker is a monthly publication produced by the MidWest Severe Tracking/Response Center, Inc. Comments always welcome. Please send your comments and suggestions to Dale Bernstein at dale.bernstein@midwestsstrc.org or Steve Fitzsimmons at midwestnewslettereditor@midwestsstrc.org. Thank you.

Severe Storm Spotters frequencies
For Dane & surrounding Counties



Map Updated
06/08/07

Frequencies in RED are the primary frequencies for that County

Made By
Frank Weisensel