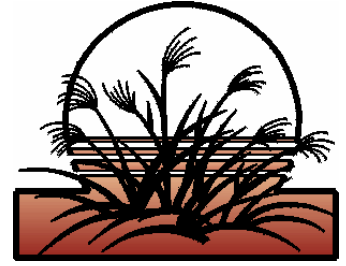




NEWSLETTER
of the
TWIN CITIES CHAPTER
AMERICAN METEOROLOGICAL SOCIETY
October 2008 Vol. 30 No. 2



Celebrating 60 years!

The October meeting of the Twin Cities Chapter will be at 7 PM Thursday, October 23rd, 2008 at Northwest Airlines in Minneapolis, MN. Specific directions to the meeting location including a map and an interactive Google link are located on the last page. AMS Members, interested acquaintances and potential members are welcome to attend.

October Meeting: Tour of NWA Systems Operations Control Facility and "Aviation Meteorology; Past, Current, and Future – An NWS Perspective with Tom Fahey, Manager Meteorology.



Our October meeting topic will be a look at Aviation Meteorology with Tom Fahey, Manager Meteorology for Northwest Airlines. Tom Fahey received a Bachelor's degree in Geology with Math and Physics minors from College of St. Thomas in 1974. He later went on to earn a Master's degree in Meteorology from the University of Wisconsin, Madison in 1981 and completed a Mini MBA Program from University of St. Thomas in 1997. He has been with Northwest Airlines since 1977.

NWA has a long tradition of over 40 years providing forecasts of turbulence and wind shear using the copyrighted Turbulence Plot (TP) System. Tom has

both conducted and supervised projects that resulted in new and/or improved methods for producing and distributing turbulence and wind shear information as well as other atmospheric based aviation hazards such as volcanic ash. Tom also initiated and oversaw development of a second set of weather products focused on operations at NWA's hub airports. Most recently, Tom has expanded NWA weather services via contracts with other airlines and has lead efforts to develop new forecast products to support NWA System Operations Control processes.

In addition to the tour and topics mentioned above, we will also be holding our October business meeting including a Special Election for Newsletter Editor.

President's Corner: Chris Bovitz

president@twincitiesams.org

You miss a meeting, you miss the cake. It's that simple. Well, we probably won't have cake at all our meetings.

We've just started the year, so there's not a lot to talk about yet. Just four quick things this time:
1) Keep your ears open for ideas for speakers. Our presenters don't have to talk only about weather.



2) Think about being one of our liaisons. If you're curious about this, let me know. You'll even get an e-mail address from the chapter!

3) Bring a friend, and tell (at least) two friends.

4) When you renew your membership, check out your old member info at http://twincitiesams.org/members_2007-08.html and let the webmaster know (webmaster@twincitiesams.org) of any corrections. Also, when you sign up (new or renewal), tell us your birthdate (month and day).

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We'll try to have a list of members' birthdays in each month's newsletter.

Chapter Officer Changes

Our current newsletter editor, Karen Trammell, will be moving out of the Twin Cities in October. She will relinquish her newsletter and science fair coordinator duties. Personally, I'd like to thank Karen for her membership in and service to the chapter, and I know I will miss her at the meetings. We've found a replacement for her science fair duties - Matt Friedlein (thanks!) - and since this is an unelected position, this was (remarkably) easy to fill.

However, the newsletter editor *is* an elected position. There is no provision in our chapter constitution that directly deals with this situation, so,

Movin' On, Movin' Up, Movin' Out

If you have big changes in your personal or professional life you would like to announce to the chapter, please send a summary to newsletter@twincitiesams.org.

A Look at Weather History: Eighteen-Hundred-and-Froze-to-Death, 1816

Anthony Stender

Today, the year 1816 is most-often referred to as the year without a summer, but it has been called many different names over the years. Unfortunately, few locations had actual weather instruments to measure the anomalous summer weather of 1816, but some recorded data do exist from that year. New England and New York were hit hardest by the cold weather, but some reports suggest that areas as far south as the Ohio River suffered severe crop losses that year. Meanwhile, portions of Europe and China experienced similar bouts of winter-like weather all summer. The weather was apparently so poor, that it inspired Mary Shelley to write *Frankenstein* while spending a dismal summer in Geneva, Switzerland.

The decade of 1810-1819 was, as a whole, a cool period for the northeastern United States and for much of the world. However, 1816 was the coolest year in this period. The winter months were actually seasonably warm, while the period from May to September was repetitively battered with outbreaks of cold weather. In Williamstown, Massachusetts, early June saw frequent snows and high temperatures in the 30s F. It then reached 94° F on June 24. The weather was then seasonable until July 9, when the high temperature only reached 43° F. Afterwards, temperatures returned to normal, with the exception of a 38° F low temperature on

I hope that I am not overstepping my bounds in calling for a special election at the October meeting.

We currently have two candidates for the job, but if you would like to run for this position, please let me know (president@twincitiesams.org) as soon as possible. Karen is working with Kevin Huyck to get out the October newsletter; the November newsletter and subsequent newsletters this year will be done by whomever is elected.

Newsletter editor: Collects items for the monthly newsletter and distribute it timely manner to not only members, but also others in the field such as the media or news organizations.

August 29. Furthermore, no snow fell during July or August in Williamstown. Due to the mild winter months, 1816 was only the third coldest year on record for Williamstown. The years 1836 and 1837 were actually colder, on average.



The unusual summer of 1816 is arguably the result of a confluence of three significant events. As in 2008, the solar cycle was supposed to be approaching its maximum, but solar activity was markedly reduced that year. Secondly, ships' records imply that a La Nina began in late 1815 and continued into 1816. Finally, Mount Tambora, Indonesia, erupted in April of 1815. Tambora was the largest volcanic eruption in the past 1900 years, and it ejected roughly ten times the material as Mt. Pinatubo.

The shortened summer of 1816 resulted in the loss of many crops in the northeastern United States.

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Moreover, it proved a severe hardship to many people who were already struggling due to the economic hardships that were facing the nation's economy as a result of the War of 1812. It also led

to the migration of many people from the northeastern United States to the West and the Midwest.

Sources:

1. Milham, W. The year 1816 – the causes of abnormalities. MWR (1924): 52, 563-570.
2. Chenoweth, M. Ships' logbooks and "The year without a summer". BAMS (1996): 77, 2077-2093.
3. Korshover, J. and J.K. Angell. Surface temperature changes following the six major volcanic episodes between 1780 and 1980. J. Clim App. Met. (1985), 24: 937-951.
4. USGS website: VHP photo glossary: VEI. Found at <http://volcanoes.usgs.gov/images/pglossary/vei.php>

Walgreens Electronic Outdoor Signs Now Deliver Vital Weather Messages at More Than 3,000 Corner Locations Across America

DEERFIELD, Ill., Sept. 9, 2008 – The electronic outdoor signs at Walgreens stores across the country are now a source of critical weather updates. Walgreens has teamed up with the National Oceanic and Atmospheric Association's (NOAA) National Weather Service to alert customers and passersby of impending severe weather.

Under the agreement Walgreens is able to access data about approaching storms, then post updates to any of its 3,300 electronic outdoor signs in affected areas. The drugstore chain will link to NOAA's data feed every five minutes to provide timely and pertinent details as severe weather draws near. Walgreens locations with electronic signs represent more than half of the company's 6,443 stores nationwide.

"Our highly visible corner locations give us a unique opportunity to provide this valuable service to communities," said Walgreen director of community affairs John Gremer. "Severe weather warnings are

potential lifesavers, and what better place to make this information available than a source that captures the attention of millions of people everyday?"

Walgreens weather alert system is just one of the ways it's using its electronic signage to provide important information to local communities. In 2005, Walgreens launched its Amber Alert initiative that posts regional bulletins on recent child abductions.

"The use of our outdoor signs for public alerts is well received in communities across the country," said Gremer. "Because so many of our stores are located in the heart of the communities they serve, we are well positioned to deliver important safety messages. We will continue to seek other opportunities to provide this type of service."

- Source, Walgreens Website

NWS Simplifying Winter Weather Products

The National Weather Service will change to a simplified winter weather warning and advisory product suite this winter. The purpose of the change is to simplify and clarify the communication and dissemination of winter weather hazards. This change will combine a number of advisory and warning products into categories associated with similar impacts. For example, conditions last winter

that prompted the issuance of separate winter weather, snow and blowing snow advisories will be issued as winter weather advisories this winter. Certain hazards will retain their own product names due to the uniqueness of their impacts.

-Source: National Weather Service

The tables below show the old and new winter weather advisory and warning products:

ADVISORIES

Hazard	2007-2008 Advisory Product	2008-2009 Advisory Product
Freezing Rain	Freezing Rain	Freezing Rain
Wind Chill	Wind Chill	Wind Chill
Mixed Winter Weather	Winter Weather	Winter Weather
Snow	Snow	Winter Weather
Snow and Blowing Snow	Snow and Blowing Snow	Winter Weather
Sleet	Sleet	Winter Weather
Blowing Snow	Blowing Snow	Winter Weather

WARNINGS

Hazard	2007-2008 Warning Product	2008-2009 Warning Product
Blizzard	Blizzard	Blizzard
Freezing Rain	Ice Storm	Ice Storm
Wind Chill	Wind Chill	Wind Chill
Winter Storm	Winter Storm	Winter Storm
Heavy Snow	Heavy Snow	Winter Storm
Sleet	Sleet	Winter Storm

Minutes of the September 18, 2008 meeting:



President Chris Bovitz called the September 2008 meeting of the Twin Cities chapter of the American Meteorological Society to order at 7:07PM on September 18, 2008. Vice President Lisa Schmit, Secretary/Treasurer Bryan Howell, and Newsletter Editor Karen Trammell were also in attendance along with nearly 15 members and potential members. The meeting was held at the Twin Cities WFO.

Since this year marks the 60th year of the chapter, a cake was brought in to celebrate. After a rousing rendition of 'Happy Birthday,' the cake was passed out to all and introductions followed.

Chris Bovitz started the business portion of the meeting with a few of his goals for the year. He would like to see membership levels continue to grow and asked everyone to bring a friend to upcoming meetings and to tell two others in hopes that they might attend as well.

The Minnesota State Fair recently wrapped up and a few of our members staffed the display set up by the Twin Cities WFO. Lisa Schmit reported that the event was a success and well received by the fairgoers. The Wisconsin coordinator for DataStreme, Gerald Larson, helped staff the display as well and performed weather related science experiments much to the delight of the children in attendance. Lisa also gave a brief description of the DataStreme program for those that were unfamiliar.

In new business, our Chapter Newsletter Editor and Science Fair Coordinator, Karen Trammell, has accepted a position at the Tulsa WFO and will be leaving us. As such, we will need to find people to fill these positions. Since Newsletter Editor is an elected position, a special election will be held at the next meeting. We would like to thank Karen for her work with the chapter and wish her the best as she returns home to Oklahoma.

A few events are upcoming that may be of interest to members. The Northern Plains Winter Storm Workshop will be held September 25-26 and is sponsored by St. Cloud State University and the Twin Cities Chapter of the American Meteorological Society. Chapter members Lisa Schmit and Matt Friedlein will be presenting at the workshop. The 3M Teachers' Workshop and Super Saturday will be October 4th at 3M in Maplewood. Members Doug

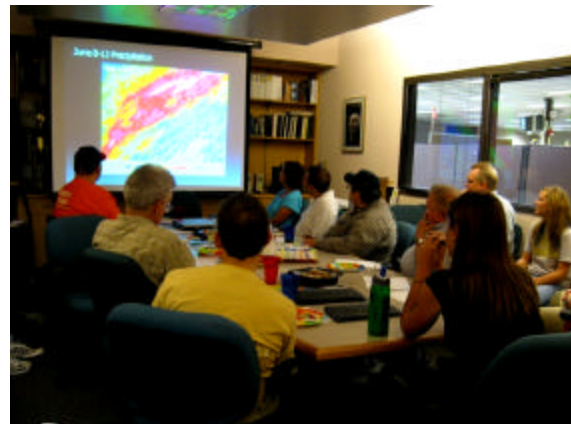
Dokken and Kurt Scholz will be participating in this event. Also, October 4th is Scout Day at the Twin Cities WFO. Scouts from across the state will be coming to the office to complete the requirements for their weather badges.

The October meeting is tentatively scheduled for October 9th [Editors note, this meeting has been switched to October 23rd] which is a week earlier than normal. The meeting will be at the Center Weather Service Unit (CWSU), which is co-located with the Minneapolis Air Route Traffic Control Center in Lakeville, MN. Arden Berge will be presenting on the duties and role of the CWSU. [Editors note, the meeting will be at Northwest Airlines]

Lisa Schmit reported that the AMS will be coming out with a new journal soon entitled 'Weather, Climate and Society.' Papers are now being accepted for this publication which will deal with how the weather affects today's society.

Just before the close of the business portion of the meeting, Secretary/Treasurer Bryan Howell informed President Bovitz that the Treasurer's report had not yet been made. The report was then read and approved.

The business portion of the meeting adjourned at 7:31 PM.



-Ms. Holz is explaining the June 8-13 accumulated rainfall

After the business portion of the meeting, Andrea Holz, a hydrologist at the North Central River Forecast Center (NCRFC) gave a presentation entitled "The Floods of June 2008 in Eastern Iowa." Andrea originally comes from Wisconsin and has worked at the NCRFC for 10 years. Her primary basins of responsibility are the Red River of the North and the Des Moines River.

Above normal rainfall had impacted Eastern Iowa during the months leading up to June and a succession of storms brought record amounts of rainfall over large portions of the region. With the ground already saturated, all of the rain that fell was going directly into rivers and streams as runoff. Some locations reported over 9" of rainfall in one day. Forecasters knew they were looking at the probability of an historical event, but the full impacts were staggering. Episodes of levee breaks and overtoppings began to occur very early in the event.

The hardest hit areas in Ms. Holz's area of responsibility included Cedar Rapids and Iowa City. The flooding devastated downtown Cedar Rapids. Over a hundred city blocks were underwater at the height of the flooding. The bridges leading to the civic buildings on an island in the Cedar River were submerged and water rose to the second story of the buildings. The raging waters also caused a railroad bridge to collapse, sending the tangled mass of steel and iron, as well as railcars loaded with rock, into the river. To make matters worse, another round of storms brought the threat of flash flooding to Cedar Rapids on June 13th, just as the river was cresting. The Cedar River crested 11 feet higher than it had in 1993, reaching an estimated 31.12 feet. Even more remarkable was that the volume of flow through the city was more than double that of 1993.

Iowa City was also hard hit by the rising waters of the Iowa River in the area of the University of Iowa. Sandbagging efforts were made along the river, but water still made it into some of the buildings of the University. Complicating forecasting of the flooding in Iowa City was the presence of a cofferdam in the river, which the forecasters were not aware of at the start of the event. The university was doing work along the shore and had constructed a cofferdam spanning roughly half the normal width of the river. The floodwaters built up behind this cofferdam and backed up for miles upstream. Throughout the event, videos from news websites and YouTube provided forecasters a first hand look at the rising waters and were used to improve the outgoing products.

Some of the other problems encountered by forecasters during the event were the loss of the river gauge in Cedar Rapids and operational tools exceeding their limits. Power to the Cedar River depth gauge was cut off as the waters rose without the knowledge that the backup battery was dead. The next reading was taken manually. By that time the river depth had risen dramatically above expectations. The models used for forecasting flooding events are better suited to handle stratiform precipitation and snow melt scenarios rather than heavy convective rainfall. Another aide in river forecasting is rating curves. Rating curves are developed for each river and relate the depth of the river to the flow. These are essential as the models output flow, so this number is used with the curve to find the depth. Due to the unprecedented nature of the floods, the depth of the rivers exceeded the curves in many places. Representatives from the United States Geological Survey and the United States Army Corps of Engineers were sent to the NCRFC in order to update the curves.

In the aftermath of the flooding, new actions are being taken in hope to lessen the impacts of the next event. New rating curve extensions are being developed with the new data, as well as changes to the models. One parameter being looked at is the possibility of using more than 24 hours of forecast rainfall amounts during prolonged weather events. Training of the Federal Emergency Management Agency and local Emergency Managers is being conducted by the River Forecast Centers (RFCs) to better understand the products and information that the RFCs provide. Training of the products put out by the River Forecast Centers is being provided to FEMA and local Emergency Managers to have a better understanding of the information available. Finally, real-time footage from agencies such as the Civil Air Patrol and NOAA Corps is hoped to be obtained during events to help in forecasting as well.

Ms. Holz then fielded questions from the group before the meeting adjourned at 8:25 PM.

- Bryan J. Howell

Secretary/Treasurer

sectreas@twincitiesams.org



AMS on the WWW

Please check <http://www.twincitiesams.org> for lots of interesting information, changes and updates.

The October meeting will be held at 7pm on October 23rd, 2008 at NWA Flight Services (Building F), 7200 34th Ave South, Minneapolis, MN. Please try to arrive a few minutes early and meet outside the entrance for temporary ID's.



Directions

Take I494, Exit at 34th Ave., Go north approx. 1/2 mile past the NWA facility you can see from 494. Further north you will see the NWA freight facility. The office bldg you are going to is attached and on the north end of the NWA freight facility. You will need to go past the bldg and take a left at East 72nd St. (this will be either the 4th or 5th set of stop lights, including lights at exit of I494 depending if you existed from the west [5 sets] or the east [4 sets] off of I494). Approx. 20 meters is another set of stop lights with 4 turn options (a sharp left; a gradual left; a gradual right; a sharp right). Take the gradual left. Drive toward the west one block and take a left into the parking lot at the stop lights Entrance to bldg F is on the west side of the bldg. Park in the 2 hour parking area or visitor area or Director area closest to the bldg entrance. As you enter there is a locked door that requires an airport ID.

<http://maps.google.com/maps?q=7200+34th+ave+south+55450>

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