Wind Chill Chart

Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes | 10 minutes | 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph) *Effective 11/01/01*

National Weather Service
824 Brown Co 14 S
Aberdeen SD 57401

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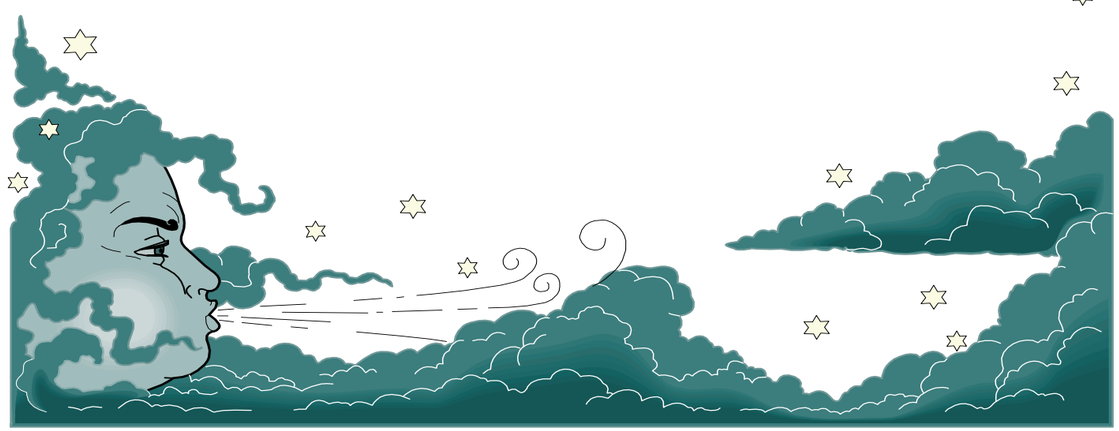
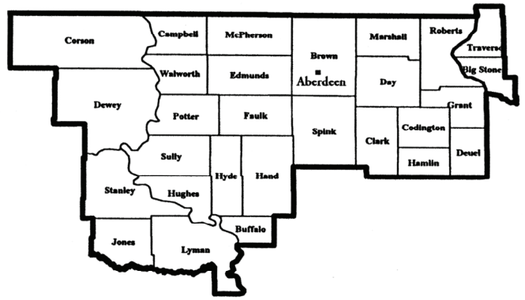
PENALTY FOR PRIVATE USE, $300

Spring, summer, and fall fill us with hope; winter alone reminds us of the human condition.
~ Mignon McLaughlin





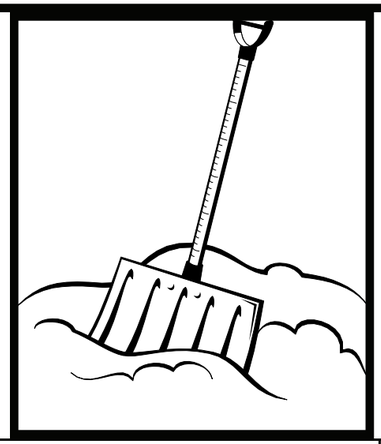
SKY SCANNER

National Weather Service Forecast Office
Aberdeen, South Dakota

January 2005

Winter Has Finally Arrived!!

Now that it appears winter has finally arrived in South Dakota, it never hurts to review some winter safety tips and procedures. Following is a list of some items you should have in a winter survival kit in your car, and some tips what to do should you become stuck in a storm.



Items for a winter survival kit:

- First aid kit and essential medications.
- Battery-powered NOAA Weather radio, flashlight, and extra batteries.
- Canned food and can opener.
- Bottled water (at least one gallon of water per person per day to last at least 3 days).
- Extra warm clothing, including boots, mittens, and a hat.
- Assemble a Disaster Supplies Kit for your car, too.
- Have your car winterized before winter storm season.

If you become stuck in your car:

- Stay with your car. Do not try to walk to safety.
- Tie a brightly colored cloth (preferably red) to the antenna for rescuers to see.
- Start the car and use the heater for about 10 minutes every hour. Keep the exhaust pipe clear so fumes won't back up in the car.
- Leave the overhead light on when the engine is running so that you can be seen.
- As you sit, keep moving your arms and legs to keep blood circulating and to stay warm.
- Keep one window away from the blowing wind slightly open to let in air.

INSIDE THIS ISSUE:

Snowfall Measurement Reminders

With winter finally upon us, its time to dust off our rain gauges, put down our snow boards, and brush up on our snow observing procedures. So, since its been such a long time since we have had any significant snow, here is an opportunity to review the procedures for measuring and reporting winter precipitation.

Helpful Reminders

1. Remove the funnel and inner measuring tube of the rain gauge to expose the overflow can so that it can more accurately catch frozen precipitation.
2. If you have them, put your snow boards out and mark their location with a flag or some other indicator so they can be found after a new snowfall. They should be located in an open area (not under trees, obstructions, or on the north side of structures in the shadows).
3. Check your gauge to make sure there are no leaks.

What do we report

1. Measure and record the snowfall (snow, sleet, snow pellets) since the previous snowfall observation.
This measurement should be taken once-a-day and should reflect the total accumulation of new snow observed (in inches and tenths, for example, 3.9 inches) since the last snowfall observation.
2. Determine the depth of snow on the ground at the normal observation time.
This observation is taken once-a-day at the scheduled time of observation with a measuring stick. It is taken by measuring the total depth of snow on ground. Report snow depth to the nearest whole inch, rounding up when one-half inch increments are reached (example 0.4 inches gets reported as a trace (T), 3.5 inches gets reported as 4 inches).
3. Measure and record the water equivalent of snowfall since the previous day's observation.

Measuring Liquid Precipitation Equivalent.

1. Report the liquid water equivalent for any NEW snowfall to the nearest 0.01 inch.

Two methods for melting snow.

- Add warm water to the gauge in order to melt the snow. Remember to carefully measure the added warm water so you can subtract that figure from your final measurement

- Another method is to place the rain gauge in a bucket of warm water. Remember to dry the outside of the gauge off so none of the water from the bucket runs down the sides and into your measuring tube.

2. If too little snow has fallen to effectively measure, report as a trace.

Reporting New Snowfall Depth.

1. Take an average of ten measurements in an open area. Try to avoid any drifts or bare spots.
2. Report to the nearest 0.1 of an inch.

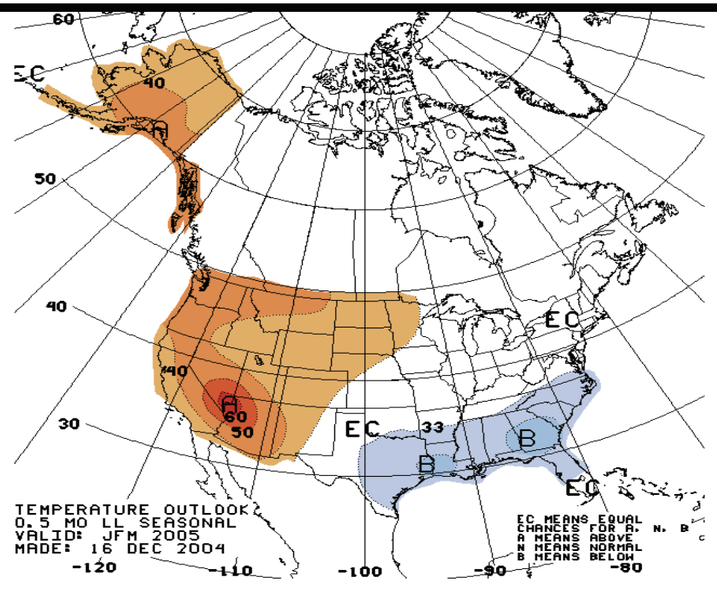
Reporting Total Snow Depth.

1. Report snow depth whenever snow covers more the 50% of the ground.
2. Report to the nearest whole inch, if less than ½ inch, report as a trace.

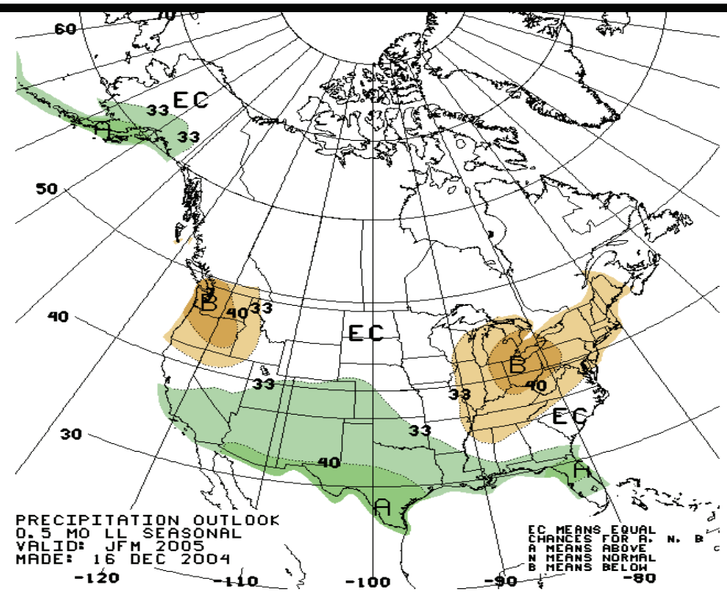
Note: measuring total snow depth can be tricky...as you know, snow may melt quickly from south facing areas, but linger for days in shaded or north facing areas. My only advice is to use good judgement in averaging the snow depth around your area.

Before ending, let me also take this opportunity to say thanks! With the assistance of our COOP and precipitation spotters we hope to have a successful winter season keeping the public informed and ready.

90 Day Temperature Outlook
January – March



90 Day Precipitation Outlook
January – March



Women in Science Conferences
March 7th-11th

Several South Dakota communities will be holding Women in Science conferences during the week of March 7th –11th. Following is a list of cities and dates for these conferences:

March 7th – Hot Springs
March 8th – Aberdeen
March 9th – Watertown
March 10th – Pierre
March 11th – Sioux Falls

The conferences are a cooperative effort supported by local agencies, schools, and businesses, in addition to several state and federal agencies. The generous support of local businesses and agencies plays a big role in ensuring the success of the Women in Science conferences. The National Weather Service in Aberdeen was a main player in getting these conferences started in South Dakota.

The target audience for the conferences is 7th - 11th grade girls. The students attend small group sessions with women who work in science related careers. Some past speakers have included a veterinarian, a biology teacher, a funeral director, a meteorologist, and an athletic trainer. All the students attend a session by a keynote speaker. Some past keynote speakers have included a forensics expert and an astronaut.

Attendees are able to gain additional information from booths set up by a variety of science oriented organizations. In addition to the information provided to the students, each teacher is provided with a "resource" packet to help them continue to cultivate their students' interest in science. Making connections with people who are accomplished in mathematics or science related occupations is one of the best ways to promote students' aspirations and achievements. This conference provides a forum for young women and girls to learn about the endless opportunities available in math- and science-related career fields, to create personal connections with professional women scientists, and to promote a positive image of science related careers for all attendees.

A logo design contest is held each year...with the winning design featured on our website and on brochures used for the conference. The winning designer must be a student planning on attending the conference, and the receive a savings bond as their prize.

Please visit the Aberdeen Women in Science Conference webpage at http://www.crh.noaa.gov/abr/ select "Women In Science" in the Misc/Outreach section). This webpage contains pictures from and information about our 2002, 2003, and 2004 conferences. The webpages for the other cities conferences can be found by doing an internet search on "Women in Science Conference" for that city.

2004 Yearly Climate Summary
for Aberdeen

2004 was an interesting year...with an abnormally cool summer and a fairly warm start to the winter season. This article contains the climate information for the year for Aberdeen. You can get this information for some other cities in the area off our website at www.crh.noaa.gov/abr in the climate section.

The highest temperature recorded in Aberdeen last year was 92 degrees on September 2nd, while the lowest was 28 below zero on January 27th. We had five days of temperatures over 90 degrees, and 31 days where the high temperatures did not reach zero.

21.77 inches of liquid precipitation fell throughout the year. 19.8 inches of snow fell...with only 1.5 inches of that falling after September 1st. We had 100 days where we received at least one hundredth of an inch of precipitation, and 4 days where we received over 1.00 inch. The greatest 24 hour precipitation total was 2.06 inches on May 29-30. The greatest 24 hour snowfall total was 2.7 inches on January 25th.

The average wind speed for the year was 10.7 mph...with the highest wind gust of 59 mph occurring on December 12th. We had 66 percent possible sunshine...with 68 cloudy days reported.

Thunderstorms were recorded on 40 days, heavy rain on 22 days, freezing rain on 4 days, snow on 49 days, and fog on 158 days with 25 of those days seeing dense fog with visibilities less than one quarter of a mile.

1-605-225-0519

When significant or unusual winter weather events occur, give us a call! We're always happy to hear from the public, especially if you're calling to report freezing rain, snow accumulations of 2" or more, or reduced visibility due to blowing snow. Don't wait until the next day...call us when it's happening.

2004 Ends With Unusual Weather

by Dan Mohr

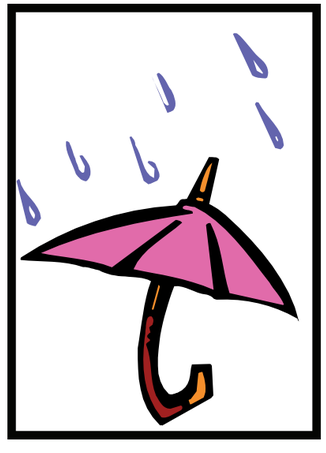
The year 2004 ended with some unusual weather indeed as a strong area of low pressure brought some very warm air to the region along with rain, freezing rain, sleet, and strong winds on December 30th. By far, the most unusual weather for this time of year was the rain in the morning hours across northeast South Dakota and west central Minnesota. Rainfall amounts from a trace to nearly a third of an inch occurred across much of northeast South Dakota and west central Minnesota during the morning of December 30th with some places receiving freezing rain and sleet. At Wilmot, two inches of sleet fell on the morning of December 30th.

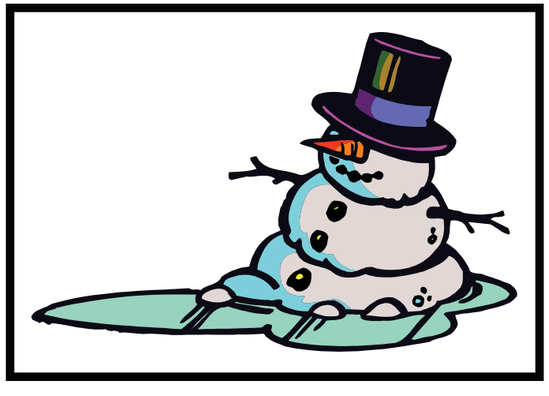
Rain at the end of December sure is an unusual occurrence as is shown by the past 40 years of observations at Aberdeen. The observations at Aberdeen show that since 1964, rain has occurred only four times during the months of December and January. Three of the rainfall occurrences were light amounts of less than .05 of an inch. On January 14th, 1980 Aberdeen received .23 of an inch of rain. On December 30th of 2004, Aberdeen received .18 of an inch with .31 of an inch at Britton.

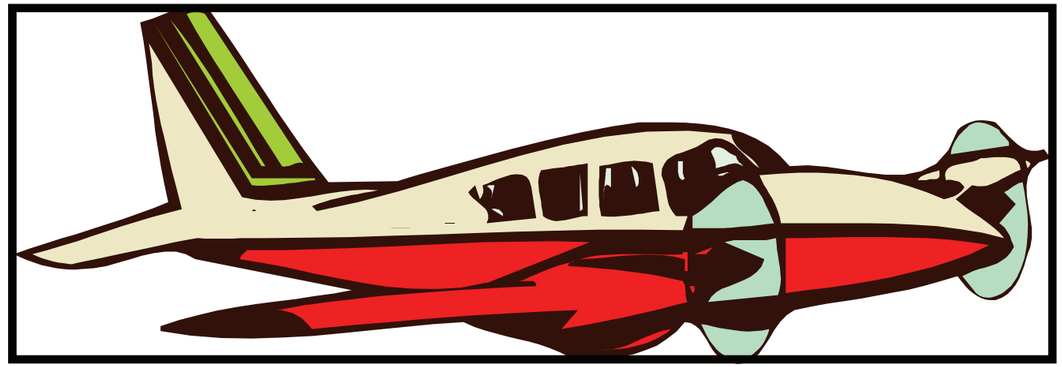
Along with the rain on December 30th, came record warm temperatures in the mid to upper 50s across central and northeast South Dakota. Pierre rose to a record high of 58 degrees with Kennebec warming to a record high of 59 degrees by late afternoon. Watertown tied its record high for the day of 49 degrees. Not only did the temperatures rise, the winds gusted to over 50 mph across much of central and north central South Dakota through much of the day.

To keep the unusual weather going, the new year began with some freezing rain and snow accompanied by lightning and thunder across parts of eastern South Dakota as an upper level disturbance lifted northeast across the area.

After a warm and dry start to the winter for November and December, the first part of January 2005 is more like one would expect living in South Dakota.







A New TAF is Coming!

by Aaron Dorn

A new aviation forecasting/planning tool is coming! That's right. At the request of several users of National Weather Service (NWS) products, a Terminal Aerodrome Forecast (TAF) will soon be available for the Mobridge Municipal Airport (MBG).

TAFs are issued by the NWS for airport runway complexes across the United States four times everyday, at 0000, 0600, 1200, and 1800 universal time. For the MBG TAF, the issuance times will be midnight, 6 am, noon, and 6 pm during Central Standard Time; and 1 am, 7 am, 1 pm, and 7 pm during Central Daylight Saving Time.

Each TAF contains a 24-hour forecast of wind speed/direction, visibility, weather/obstructions to visibility, sky cover and ceiling height in feet above the ground, as well as other weather phenomena relevant to aviation operations, such as low level wind shear, icing and wind squalls.

The MBG TAF will become operational at 6 pm on April 18th. Of course, official Pilot Weather Briefings continue to be available exclusively through the Federal Aviation Administration Flight Service Station in your area. But, if you want to know what the point-specific weather forecast is for the Mobridge Airport, in aviation-specific format, you will be able to view that information by visiting aviationweather.gov, effective April 18th, 2005. Aviationweather.gov also contains the surface observation data, called METAR, reported hourly at the Mobridge Airport and can be viewed by selecting the METAR menu choice and using the three-letter identifier, MBG. The NWS Weather Forecast Office in Aberdeen also produces TAFs for the airports in Aberdeen (ABR), Pierre (PIR), and Watertown (ATY).

If you have any questions about the weather, or would like more information concerning the new MBG TAF, check out our webpage at http://www.crh.noaa.gov/abr. We may also be reached by calling 605 225 0519 or via email at w-abr.webmaster@noaa.gov.