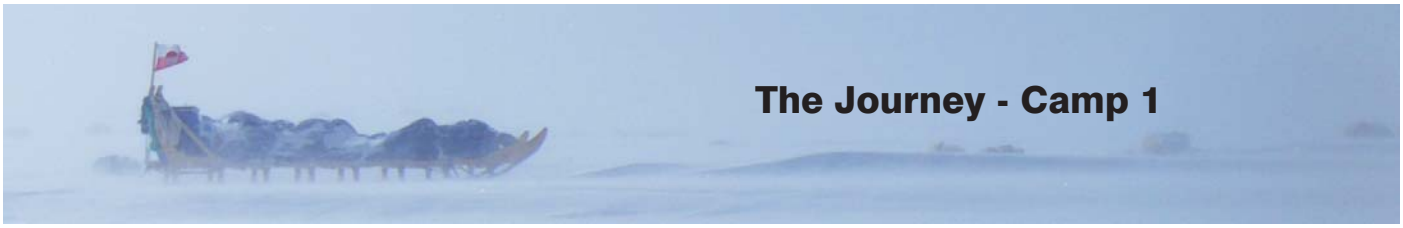

The Journey - Camp 1

DATE: 9th May 2009
LOCATION: 65.50888, -39.06379
HEIGHT: 1207m
WEATHER: LIGHT SNOW, WIND INCREASEING
TEMP: 15.8°C DAY & -8°C NIGHT

Diary entry

The first night on the ice cap in sub zero conditions was remarkably comfortable in our super dooper sleeping bags that can easily endure temps of -50˚C, though it was not quite that extreme; temperatures in the tent only went to -6˚C. We woke at 7am but this was not to the first light as we had blazing sunshine in our tents at 2am.

We were packed away by 9.30 and the team had set off ahead of the dog sleds. The snowfall during the night coupled with the searing heat of the sun meant breaking trail was more like stomping through syrup rather than gliding over ice. At midday the temperature recorded was 15.8˚C with virtually no wind. We were down to our thermals and were struggling to take on water to replace that being lost through sweat.

Reapplication of sun tan lotions was paramount particularly as the wind increased slightly and it became deceptively colder. Wind chill is a big issue in the Arctic; we have recorded the temperature this evening at -4.9˚C, but with wind chill that plummets to -7.9˚C

Picture 4 - Nicola taking a temperture reading

Picture 5 - Nicola taking a wind speed measurement

WHAT IS WIND CHIILL?

If you stand outside and tell me what the temperature is you are more likely to be giving me the wind chill temperature rather than just temperature. Wind chill is known as the 'feels like'' temperature. It is based on how quickly heat is lost from exposed human skin. It is due to the combination of both temperature and wind; the stronger the wind, the quicker your body losses its heat.

Exposure to the cold and the wind can be life threatening. The most vulnerable parts of the body are the extremities; the nose, the fingers, toes, ears and lips. Once the skin temperature has cooled eventually the body's core temperature will cool, this can lead to hypothermia.

On a windy winter day, find a sheltered spot and measure the temperature. Then take the temperature again, but this time in the wind. Is there any difference in the temperature? Remember not to have the thermometer in direct sunlight! If you have an anemometer then you can also measure the wind speed and see how the temperature varies under different wind conditions.

NOTE: The threshold for Wind Chill temperatures is normally considered temperatures at or below 10 degrees Celsius (50 degrees Fahrenheit) and wind speeds above 3 miles per hour. Wind Chill temperatures also assume no impact from the sun (i.e., a clear night sky), since bright sunshine may increase the Wind Chill temperature by as much as 5.5 to 15.5 degrees Celsius (10 to 18 degrees Fahrenheit)

NWS Windchill 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

REFERENCES

http://www.physlink.com/reference/weather.cfm

http://www.accuracyproject.org/WindChill.html