

# One Man's Guide to Climbing Mount McKinley (Denali) - and other high cold places -



Text and Photos by Timothy Hult

Revision 3, February 2009

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## **Acknowledgements & Dedications:**

The people below through either their active participation in editing this text, or through sharing their stories, pictures and experience of climbing Denali and other high places through the years contributed to this article. Numbers in parenthesis are the dates these individuals were on the mountain the small “s” indicates the year they summated.

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- Aaron Schuman – editing and web assistance
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- Joe Burton (2005s) – “Team 3D” member and my rope mate in 2005. Joe and the other two “Team 3D” members made my 2005 climb a success.
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- Scott Warner (2005s) – “Team 3D” member in 2005
- Charles Schafer (2003 – sat out storms at 17k before running out of food)
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- Christine Desrosier – My partner in all things including long excursions into the wild and high places, and who has been understanding during the process of writing this near book length article.

## **Changes to the third version**

Copyright notice enhancement  
Acknowledgements and dedications  
Radios and cell phone information updates  
Photography updates and additional information  
Index of Tables and new tabulation

Air travel restrictions and thoughts on packing for the airlines  
Additional cross-references within this document to figures, and tables  
Addition of a few web site call outs (check for changes)  
Overall revision of grammar and syntax throughout document  
Enhancement of some photos with additional comments and notes  
Additional references and news items from government and press sources

### **Disclaimer**

Climbing is dangerous. People die. Climbers die and get seriously hurt on Denali every year. I've seen the dead and the wounded being lifted off the mountain all three times I've been on the mountain (1989, 1997, & 2005). Do not use this as your only source of information. Double-check it with other sources. Read other texts, check with the Denali Rangers – listen careful to what they have to say! Don't be arrogant. Be humble. Denali **IS** bigger than you, **DENALI WILL KILL YOU** if you think otherwise.

*The author assumes no responsibility for any actions you may take after reading this article. If you are not properly prepared to climb this deadly mountain, don't. If in doubt, descend; the mountain will be there next year.*

### **About the Author:**

Tim Hult is an Engineering Program Manager with General Dynamics in the San Francisco Bay Area California. I have no first ascents to my name, have usually done only the pedestrian routes on brand name mountains – albeit some pretty big ones in interesting places all over the world. Generally, I believe simply getting out there and getting up something with friends then coming home safe is enough of a big deal that I don't seek my thrills from having life-threatening adventures add much to my outdoor experience. With this attitude I've had a good time climbing over 200 peaks all over the world : Nepal (2x), New Zealand, Hawaii, California and the American West, Japan, Kilimanjaro; South American monsters in Peru, Argentina, Chile, Mexico and Ecuador; Peaks in the Canadian Rockies as well as the “starter peaks” in my native Adirondack Mountains around Lake Placid NY. On any given weekend you'll find me skiing in Tahoe, hiking in the Sierra Nevada Mountains, or “getting some exercise” in the Santa Cruz mountains above Silicon Valley with my talented, lovely and always eager, partner Christine.

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## **1 Preface to the Third Edition**

June 6, 2005, on the sixteenth day of my third attempt, my three teammates and I summited Denali – all 20,320 ft of it. In summiting McKinley, I now have an answer to the question I often get from non-climbers: “what is the hardest mountain you’ve ever climbed?” The first edition of these notes was written for my partners of the 2005 expedition to help prepare them for the climb. The second edition was the first to be web-published and included many of the lessons I learned on that trip, especially the impact of newer clothes, techniques, and the importance of the old safety lessons.

I wrote this third edition after hearing from others in the climbing community that they had found the second edition useful, and was encouraged enough to keep it updated. The Third edition corrects grammatical & syntax mistakes, fixes some of the tables for readability on the web, updates information based on antidotes from other climbers who have done the peak in 2006 & 2007, updates some of the web-based information, and resizes some of the photos with additional captions to make them easier to read on the web. The third edition also re-formats some of the photos to both make the easier to view on the web, but also gives them a smaller file size for easier viewing on low speed connections. I have copyright the photos, and I’d appreciate it if you do not print them out for display or other commercial use. If anyone is really keen on having a copy of one of these photos in full resolution, I’d be happy to sell them one. Please contact me for information.

## **2 Introduction**

This essay / check list / opinion piece is designed to answer the many questions I’ve gotten over the last several years concerning my experiences during all three of my attempts on McKinley / Denali in 1989, 1997 and finally a successful 2005 expedition. It is a discussion of my experiences on the mountain, and a checklist of things I’d bring again. Mostly, this piece is a set of rambling opinions, NOT intended as advice, so much as a telling of my adventures in one of the most starkly beautiful places I’ve been. Hopefully, other climbers may find this format more useful than a simple narrative available elsewhere on the web. Of course, Climbing is inherently a dangerous, and an attempt on McKinley should be made with the full knowledge that climbers die on the peak every year. But McKinley is in a special category that not even Everest can be placed in: those peaks that are mentally difficult to climb. For while the technical difficulties aren’t huge, the objective hazards are real, sustained and inescapable for the entire time you’re on the mountain. Unlike Everest where parties shuttle up and down the mountain from the relative comfort of a base camp equipped with satellite phones, pizza, extra thick “luxury” self inflating mattresses, 3 person tents with a single occupant, and a well worn trail leading home that’s devoid of objective danger – a trail that a person can walk to Lukla in 3-4 days while staying in “tea houses,” drinking beer, eating potato chips all along the way - no such amenities or escapes (physical or mental) exist on McKinley. Any attempt should be made with the knowledge that Denali is a serious mental challenge. It is not a mountain that allows the near cavalier attitude: “I’ve done the Mexican

Volcanoes, I can do this.” Denali is a serious mountain that will tax your mental and physical stamina, your mountain-craft, and your tolerance for discomfort. Once you are on the mountain the only way off is to either wait for good weather to fly off, or to walk for 10 days through incredibly difficult terrain. To gage just how staggering this massif is, consider what one of the glacial pilots told me: “in just about every guided party of 10 or more I’ve flown onto the mountain over the years, at least one person gets off the plane and 10 minutes later gets right back on after experiencing first hand what a vast place this is.” These would-be McKinley climbers experience the certainty that once the plane takes off, and they’ve strapped on their skis or snowshoes, they are committed – no Cokes, no fast food, no repair shops, no MTV, nothing but what you carried on your back, their (or their guides’) experience, and their own internal fortitude. They also experience the WOW factor upon stepping off the plane. There are few places in the mountaineering community where one can be transported from the flatlands and land in a true mountain kingdom 30 minutes later amongst mountains as beautifully intimidating as those that surround Kahiltna base camp.

Finally, this essay should not be your only source of information. Read other sources, surf the web, talk to climbers that have done it, read the park service web site, and finally listen *very carefully* to the rangers’ briefing in Talkeetna. Then search your soul and ask yourself if you really want to spend three plus weeks of physical and mental deprivation for the 50% chance of standing on top of N. America. Perhaps you would rather spend 3 weeks in the Costa Rican Cloud Forest; or climb all three Mexican volcanoes and chug Negro Modelos in Puebla in between them; climb Africa’s Kilimanjaro then do a wildlife safari on the Serengeti plain; hike the Peru’s Inca Trail then wait at the Sun Gate to enter Machu Picchu at dawn; or trek to Everest Base camp over three weeks through the Kumbu region in Nepal, climb Kala Patar and take some terrific pictures of *the other* big mountain. If all else fails and you decide that this isn’t the kind of trip you thought it was after listening to the ranger in Talkeetna, then jump on the bus in Denali park and take the ride out to Wonder Lake for the wildlife experience of a lifetime rivaling what you’ll see on the Serengeti.

In the interest of full disclosure, I need to tell the reader that while I’ve been to McKinley 3 times, I’ve only summited once, and accomplished that feat only after a sustained push with an excellent team who managed to find a weather hole for our perfect summit day after waiting 3 days at the 17,200 ft high camp in temps that dipped to –25 deg F. We were lucky, the four days preceding our summit push, and for a full week after, the weather was lousy and no one made it. On my `97 attempt my partner Steve Eckert only managed to summit in a single, one-day heroic effort from our Genet Basin camp at 14,000 after I fell ill with the flu after a carry to 17.2k. In my first attempt in `89, I got to 18k on the West Rib before bad weather forced us to retreat when our food ran out during a 3-day monster storm that dropped waist deep powder snow making it impossible to continue upward on the last day available to us. Overall, I’ve spent some 9 weeks living on the ice and snow of the great peak and feel you may benefit from my experiences.

A preamble comment before we begin. Climbing McKinley requires the successful party to be not only physically fit and mentally tough, but also logistically prepared, and internally harmonized. Climbing the mountain using guidebooks is a really good way to become acquainted with what to expect on the peak, but is not a substitute for practice and deep group discussion about schedules, alternative climbing scenarios beyond the rosy one you planned on in your living room, group dynamics and plain old human understanding. Making lists of food, equipment, potential schedules, and talking through the options will make it possible for you to do this peak. Simply “showing up and doing it,” doesn’t give the best odds for success. Careful planning and diligent execution of your plans does.

This essay is arranged in a free-associated list of topics, interspersed with equipment checklists and some interesting stories. I hope you enjoy it and find it useful.

#### **2.1.1.1 Anecdote: Which is Harder Everest or McKinley?**

In 2005 we met a 46-year-old solo climber from Vancouver Canada. He was on his 4<sup>th</sup>, 5<sup>th</sup> or 6<sup>th</sup> trip to Denali - I don’t remember exactly how many times, just that he had been there more than I and seemed to be doing this trip as a “jaunt.” He was in really good shape and well acclimatized – as witnessed by his one-day solo push with *all* his gear from the landing zone (7k) to the 11k camp (this spot usually takes 3 – 5 days to arrive at after multiple carries). His acclimatization was probably the result of his ability to pursue his mountaineering passion to a degree most of us can only dream of as he had been on guided trips to Everest several times (typically cost is \$60,000+/trip), making it to the top at least once. “Doing Denali” was something of a hobby for this guy and he knew the mountain well. Given his Everest experience, everyone in camp asked him how the two “emblem mountains” compared. He claimed Denali was harder as the physical effort to climb it was more difficult and sustained. While it is true Everest is higher, and most people use Oxygen, all the climbs he had been on were supported by Sherpas, who carried all the gear except personal gear up the peak, and coached (in some cases hauled) climbers up the hard bits. While on Denali, it was both colder for longer periods of time, and climbers had to do *all* their own work to get to the top. By the way, he made the top of Denali in 10 days (very, very fast by most measures), and if memory serves it was his 3<sup>rd</sup> or 4<sup>th</sup> time to the top.

For more reading on this topic see:

[http://www.americanalpineclub.org/docs/HueyEverestAAJ\\_03.pdf](http://www.americanalpineclub.org/docs/HueyEverestAAJ_03.pdf)

## **2.2 Weather**

It snows a lot on Denali. It snows all the time on Denali. Sudden, blinding snowstorms blow up at least once a week and may last for days at a time. When it snows hard, you or one of your tent mates will have to get up every two hours and dig the tent out in order to keep the air circulating around it least you suffocate. There are times that you WILL get caught in a storm so severe you’ll have to make camp right where you stand. When the weather clears, you may

find you've pitched your tent next to a crevasse. *No One*, climbs McKinley in "good" weather; sometime during your climb it will snow and be nasty – very very nasty. When it does, you won't be able to just head for the cars. You're there for the duration. You'll have to stick out some of the worst weather on the planet with nothing but a thin tent and a warm sleeping bag between you and death. Be prepared, buy and bring the right equipment. Be aware, true "expedition quality" gear seldom means lightweight. The key to your survival will rest on the quality and durability of these few things: tent, sleeping bag, sleeping pad system, footwear (boots, socks, liners, crampons), and outerwear (parkas, wind breakers, pants).

### **2.2.1 Weather Zones**

In my time on the mountain, I've learned that the weather may be divided into two zones: weather below 14,000 ft and the weather above 14,000 feet. Generally, the weather above is generally better (less foggy soup caused by "local, mountain" weather) than that below Windy Corner (at 13,000), but much worse when a storm front moves in as the winds will be *much* higher and it be way colder up high. Hence, it is not uncommon for it to be snowing at 11k, and sunny at 14k and above. It is also not uncommon for 2 feet of snow to drop overnight, or even during the day on any part of the mountain, but more common at lower elevations. Several times, I've been in storms requiring someone to shovel out the tent every 2 hours to keep it (and you!) from becoming buried. (Aside: surprisingly, we did *not encounter* this kind of intense snow dump in 2005, but did have at least one multi-day moderate storm that kept us from moving, and it did get to -25 deg F at high camp – cold enough to freeze the stoves). I've also skied in a white out so complete I had to look down at my feet to tell if my boots were still sliding past snow - they were. I had lost sight of the route-marking flags as well, so I stopped, dug a hole for the tent, then crawled in and fell asleep for 12 hours (during the 1989 trip multi-day, giant snow dumps seemed to be the norm)

### **2.2.2 Weather cycles**

I've noticed the weather seems to come in roughly 3 to 5 day cycles.

Day 1: Beautiful weather, winds are calm or light breezes all over the mountain. This is the day to summit or make a big move up around Windy Corner.

Day 2: Weather is still good and permits moving up all over the mountain, but the winds are picking up and this may prevent summiting the high mountain above 17k, so while a summit bid is possible, keep your eyes on the horizon for approaching storms when moving up beyond Denali pass. Note that clouds are forming everywhere and by evening, flurries may be falling. This weather pattern may actually last several days. Good enough to move up, but not to summit. Getting around Windy Corner may be difficult, but not impossible however.

Day 3: The storm hits in all its fury. You won't be able to move anywhere on the mountain. This is tent – bound day. Make sure the hole you put your tent is both deep and large enough for you to swing your shovel to dig it out! It is not uncommon for climbing partners to have to suit up every two hours to dig the tent out to keep it from collapsing. I've seen this pattern last for up to 3 days on the mountain.

Day 4: The storm continues, but is abating (or not). You may be able to move lower on the mountain, but summiting or moving up to 17k is out of the question. This part of the cycle may last one more days as it is not uncommon to be snow-bound for 3+ days.

Day 5: See Day 1 or perhaps day 2. Either way, you will want to move up to high camp or go for the summit.

The careful reader will note that there is often a very limited window in which difficult parts of the mountain may be climbed (windy corner, the move to high camp, and of course summit day). The real problem is teams often find themselves trapped at high camp for days after they used the weather window to do both a carry, then move up, and finally take a rest day. This usually leaves them in poor weather on the day they want to summit. If luck is with you however, this poor weather won't be either too bad (heavy snow in high winds) or last too long. Ideally, the poor weather lasts at most 2 days which will give you time to acclimatize without suffering the ill effects of staying too long at this altitude. In the end, your success may very well depend upon when in the weather cycle you choose to leave 14k and go for high camp. This is another reason to invest some time in understanding the weather on your own by using your own tools and listening for state-wide weather forecasts.

### **2.3 McKinley Weather Forecast**

The recreational forecast for the mountain is contained on a special web site during the climbing season (not during other times of the year). I've excerpted one from the web site for this third revision in 2008. The weather is fairly typical, in that it indicates a storm will blow in after a period of relative "decent" weather. You'll note this report is for the peak of the climbing season (early June), and contains no mention of the "lows," only the highs – which are "around zero" at several points on the mountain. If you surf the web for other commercial web sites, these will not cover the part of the mountain climbers are interested in. The public radio station in Talkeetna at 88.9 on the FM dial may be another source of weather if you miss the official broadcast from the park service.

The weather forecast reprinted below is from the NOAA web site and may be found at:

[http://pafg.arh.noaa.gov/wmofcst\\_pf.php?wmo=SXAK49PAFG&type=public](http://pafg.arh.noaa.gov/wmofcst_pf.php?wmo=SXAK49PAFG&type=public)

#### **For June 8, 2008 (note that this is prime time for summiting Denali)**

Mount McKinley Recreational Forecast

SXAK49 PAFG 081416

RECAFG

**AKZ225-090930-**

MOUNT MCKINLEY RECREATIONAL FORECAST

NATIONAL WEATHER SERVICE FAIRBANKS AK

**616 AM ADT SUN JUN 8 2008**

THE FORECAST FOR THE LOWER ELEVATIONS OF DENALI PARK IS COVERED BY THE DENALI ZONE FORECAST FOUND ONLINE AT <HTTP://PAFG.ARH.NOAA.GOV/ZONEFCST.PHP?ZONE=AKZ225>

**(ALL LOWER CASE EXCEPT AKZ225)**  
FLYING WEATHER FOR DENALI IS AT  
[HTTP://AAWU.ARH.NOAA.GOV/DENALI.PHP](http://AAWU.ARH.NOAA.GOV/DENALI.PHP) (ALL LOWER CASE)

ALTITUDE FORECAST...  
WIND SPEEDS ABOVE 14,000 FT ARE FREE AIR.  
TEMPERATURES ARE FAHRENHEIT.

SYNOPSIS...THE UPPER FLOW WILL BEGIN TO INCREASE OUT OF THE  
SOUTHWEST TODAY AS A LARGE STORM SYSTEM DEVELOPS WELL NORTHWEST  
OF THE MOUNTAIN.

**...7,000 FT TO 14,000 FT...**  
**...WIND SPEEDS LESS THAN 20 MPH ARE NOT INCLUDED...**  
.SUNDAY...MOSTLY CLOUDY.  
HIGH AT 14,000 FT...10 TO 15 ABOVE.  
.SUNDAY NIGHT...MOSTLY CLOUDY.  
LOW AT 14,000 FT...NEAR ZERO.  
.MONDAY...MOSTLY CLOUDY WITH SNOW LIKELY. SNOW ACCUMULATIONS LESS THAN  
6 INCHES.  
HIGH AT 14,000 FT...NEAR 10 ABOVE.

**...ABOVE 14,000 FT...**  
.SUNDAY...MOSTLY CLOUDY.  
HIGH AT 17,000 FT...NEAR ZERO.  
WINDS FROM 17,000 FT TO THE SUMMIT...SOUTHWEST 15 TO 25 MPH.  
.SUNDAY NIGHT...MOSTLY CLOUDY.  
LOW AT 17,000 FT...NEAR 10 BELOW.  
WINDS FROM 17,000 FT TO THE SUMMIT...SOUTHWEST 15 TO 25 MPH.  
.MONDAY...MOSTLY CLOUDY WITH SNOW LIKELY. SNOW ACCUMULATIONS LESS  
THAN 6 INCHES.  
HIGH AT 17,000 FT...NEAR ZERO.  
ZERO. WINDS FROM 17,000 FT TO THE SUMMIT...SOUTHWEST 20 TO 30 MPH.  
.OUTLOOK TUESDAY THROUGH THURSDAY...THE WEATHER WILL REMAIN  
UNSETTLED THROUGH THE MIDDLE OF THE WEEK WITH PERIODS OF SNOW AS  
AN UPPER TROUGH OF LOW PRESSURE DROPS SOUTH ACROSS WESTERN ALASKA  
AND  
REMAINS WEST OF THE MOUNTAIN. SUMMIT WINDS WILL BE OUT OF THE  
EAST TO SOUTHEAST 30 TO 40 MPH TUESDAY THROUGH THURSDAY.

This forecast is only available during the climbing season, so if you surf over to  
this site during the winter, you won't find it.



**Figure 1 Around Windy (Icy!) Corner (13,000 ft.) – Note storm clouds below**

You are now climbing above the lower level soup, and entering the higher regions of the mountain. The price for this is having to cross “Windy Corner” and the objective danger it presents. Two of the three years I’ve traversed this area it has been frozen over with extremely icy conditions. Any fall here would be difficult for your partner to arrest before the two of you reach the monster crevasses a short distance below. Pressure from groups below will prevent you from setting up anchored belays, and freaked out, less experienced climbers may occasionally cause you to stop on the traverse (not a good feeling). Be prepared to pull your turned over sled across this entire feature as you won’t be able to “fix” it while in route. Keep going!





**Figure 2 Snowshoeing through a snowstorm at 10,000 feet**

Note the distance between climbers, the properly set up of the rope between the sled and this woman climber, and the full crevasse rescue kit she is either wearing or is at the ready. The use of a chest harness is evident as well as ascenders, and picket. Oh, and she is smiling! Climbers do take some kind of perverse pleasure in participating in this grand adventure even when the weather is bad.



## **2.4 Suggested climbing strategy**

Get to 14k feet in whatever weather you feel comfortable traveling in. Below 11k feet this will mean days of moving up in poor weather. From 11 – 14k you'll have to choose your days more carefully to be able to get around Windy Corner, but once you're at 14k you can hibernate through a big storm until a high pressure system moves in ensuring 3 – 4 days of good climbing weather for your push first to high camp at 17k and then onto the summit. Besides, 14k is a good place to acclimatize, and the social atmosphere is as party-like as it gets in the high altitude climbing community. If the weather is good when you arrive at 14k, you may be tempted to push on immediately. In my view this is a mistake unless you have recent high altitude acclimatization. You'll need at least a day to get yourself organized and the days spent at this relatively benign altitude will be good for you. Both Steve Eckert and I are convinced that success high on the mountain relies on getting a solid foundation of low level acclimatization down below – this is another reason to bring enough food for at least 21 days. If the weather report is for stable weather for a couple of days, and you feel up to it, then you may be able to move up higher, but if the weather pattern is per usual, then wait at 14 k, rest up, acclimatize, dig your snow hole deeper, swap stories and gather info with other climbers. A storm will blow in shortly. Keep listening to the weather on your radio, and correlate what you hear with the place names shown on your Alaskan state map to see how the patterns are developing. Pay attention to the pressure readings in mili-bars at various locations, this will allow you to make your own forecast. While I personally know of at least 5 people that summited from 14k in a one day climb, this is the rare exception. Most parties need a minimum of 3 “good” days and one “excellent” day to make the summit from 14k. Plan accordingly. Don't be over eager to “get up there” only to wait out the next big storm to blow in your tent. High camp will take its toll on your psyche and your body limiting the time spent there is a good thing.

### **2.4.1 “Sneaking up” on Big Mountains like McKinley**

Steve Eckert, my partner in 1997, has a mantra about climbing big mountains: “you don't conquer or assault them forcing your way to the top, you sneak up on them and work your way to the top when they aren't looking.” This may seem like a strange notion to a fit 25-year old hardman climber who's got a list of impressive crag climbing feats as long as his arm, but to more experienced climbers this sort of personification makes sense. Big mountains are a different kind of animal than just about any other objective in mountaineering. While your local 5.12c crag can kill you quickly if you make a mistake, a big mountain like McKinley will kill you slowly and without warning. Slowly and without warning? Huh? Yep. The killing factors on hard crags are obvious immediate, but on big mountains they are most often the accumulation of factors that will get you days or months after you made a poor decision. Buy the wrong tent 2 years ago and bring it with you to McKinley because you can't afford another one? It may kill you at high camp when winds hit 70mph in a driving snow storm. Decide not to bring a rope, harness or learn solo crevasse rescue months before your trip? McKinley and other big glaciated mountains have hidden crevasses the size of houses ready to swallow you and your party whole. You're at 14k and there's only one week left in your vacation so you decide you “have to go for it”

regardless of the weather forecast. After all, you grew up in the snow belts of the great lakes and lived in parts of the country where it gets down to -40. This can't be any worse. Oh yes it can, and it will.

Nope, the weather, your gear, your conditioning, and even your karma have to just right to summit McKinley. If you push the envelop and force the mountain, it will push back, and believe me it is WAY bigger than you.

#### **2.4.2 Potential summit schedule from 14k**

A summit bid itinerary may look like this:

Day 1 -move to 17.2 from 14k

Day 2 - rest day at 17.2k;

Day 3 - summit day could be this day or on Day 4. Most parties however add a day to this schedule and do a carry / acclimatization day at 16k or 17.2k. While extra time at 17.2k will add to your acclimatization, don't spend too long there as your body is now in a delicate balancing act between acclimatizing and breaking down. In 2005, we spent 2 days at 17.2k waiting out bad weather blowing up on Denali pass before our successful summit bid on day 4.

Day 4 – 2<sup>nd</sup> potential summit day . Four days seemed to be about right, as none of us had trouble with altitude on summit day, but the weather dictates your climbing window, not your personal acclimatization schedule. Other parties attempted a summit bid the day before and the day after and were turned back by high winds at Denali pass both days.

Day 5 – Descend to 14k.

While at 14k you're waiting on the weather to move up. On the first clearing day, the weather will be "marginal." Do a carry to 17k with a least 3 days worth of food and fuel. Since you're not going to stay at high camp it won't matter if the weather isn't perfect. The next day (day 2) is usually pretty good, and on this day, you move your camp up to 17 k with some additional food. The weather the next day (day 3) will either be terrific or deteriorating: which means you'll either go for the top, or have to wait it out. Let your body be your guide however as if you haven't acclimatized a premature summit bid may ruin you for another attempt. If the weather or wind is bad, you may find you'll need the rest day anyway, so take a walk out to the edge of the Buttress and admire the view. Don't lie in your tent however. To best acclimatize, you'll need to get some exercise, even if that is just talking to others around camp. Your summit day should start with good weather, if clouds are at your level and approaching, it isn't a good idea to go further. Many parties climb to Denali pass at 18k to "see" if the wind is blowing up there or has let off. This is a fair strategy. If you're lucky and it isn't windy, then press on to the summit, but *keep an eye on the clouds in the distance. A horrendous storm can blow up at any time trapping your party for a day or more in one of the worse places on the mountain to be in a storm, and you'll be there without a tent or a sleeping bag.* The usual summit time is 6 -9 hours to the top, up to 12 hours round trip. Once you're down and you're not completely wiped out, move off the high camp plateau immediately – it's all down hill you know. Getting yourself out of this high cold place and down to 14k where it is both warmer and less windy is a good idea.

That's it. You only need 3-5 days of decent weather to make the top in the entire 20 – 26 day trip. It's all in how you plan your summit bid. Go too early and you'll run out of food up high waiting out the tail end of a high altitude storm. Go too late and you'll run out of food waiting for the weather to clear after you've acclimatized. Whatever you do, plan to hang tight at 14 k and feel out the weather until you see that "weather window" develop. You'll know when it's right to go. If the weather isn't going to be good, leave what's left of your food, go down to 14k, regroup, rest and try the next weather window. Beware however that this last strategy is a difficult one to pull off as the psychological drain us a big one: going up (1<sup>st</sup> carry), then down, then up (move to 17k), sit for days, then down, then up for a second summit attempt. Most parties simply head for home – as my partners in `89 did, and I've seen numerous others do as well see Anecdote: Snuggling with Amy. Paragraph 2.4.2.2

Last weather tip: Do something physical everyday that the weather allows while you are at the 14k camp, and some at 17.2k as well. Most climbers make the mistake of "acclimatizing" at 14k through rest alone. This is bad. Simply walking up to the start of the fixed lines at 15.5k on your "rest days" will accelerate your acclimatization schedule. Similarly, hanging out at 17k through a monster storm waiting for better weather isn't a strategy for success. It can be very cold and very windy up there, and your body will begin to break down. This very thing happened to a friend of mine in 2003.



**Figure 3 The successful 2005 "3-D" Team on top of McKinley – 20,320 ft**

Top Left: Scott Warner, Top Right – Steve Shields; Bottom Left – Joe Burton, Bottom Right – Tim Hult

#### **2.4.2.1 Anecdote: The Wind. The wind”**

One of my most enduring memories from the `89 expedition was of the many climbers streaming off the mountain in late May after having been pinned down for several weeks by poor weather. That year no one had made the summit as of Memorial Day – usually about the middle of the climbing season. As we hauled our 120 lb drag bags up the Kahiltna glacier, one of our members would ask every group that passed on the way down: “did you make it,” or “how was it?” Often our only reply was a thousand yard stare from faces and minds hollowed out by the days of numbing stress listening the wind howl, avalanches crash and tents flapping. The exhausted look of those that had been out at all times of the day and night to shovel out their tents; the boredom of lying flat on their backs re-reading the same novel again and again; and the knowledge that they were not going to make the top. For these climbers who had been in close combat with the weather, they could only mumble the words: “the wind, the wind” as they moved past us down, and ultimately, off the mountain.

#### **2.4.2.2 Anecdote: Snuggling with Amy.**

I’ll bet you’re smiling aren’t you? Well this story isn’t what you think it is. Joe Burton and I came back from our successful 2005 summit bid to high camp at 17k at around 12:30 am to find another tent pitched next to ours in our spacious snow hole. The temperature was far below zero and our stove had frozen up again (more on this phenomena later), and we made far too much noise trying to get it going. So much noise that we ended up waking up a couple of young (early 20’s) climbers in the other tent. One of them was gracious enough to get up and lend us their unfrozen stove that they had kept in the tent. Joe and I slept until 10 the next morning, and when we got up, we found our hole-mates had headed off toward Denali pass (18k) where the wind was now blowing up a gale. They came back at 11 after a three hour round trip saying the wind was so strong at the pass they had been forced to turn around. Now they had a dilemma on their hands. The forecast was for poor weather for the next several days and they had food up high for only 2 more. Summiting wasn’t going to happen without going back to 14k to re-supply. One of them turned to his partner and said, “I don’t want to be here any more. I’d rather be at home snuggling with my wife Amy.” We met them at the runway at Kahiltna base (7.2k) 24 hours later. One of them was using the satellite phone they had rented (Iridium) telling Amy he was coming home.

I don’t know who Amy is or what she is like. I was only briefly acquainted with her husband. But I am sure she is one lucky woman to have married a caring man. I hope they have many happy years together.

### **2.5 Are you ready for Big Mac?**

If climbing McKinley is a life-changing event, then getting ready to climb it is a lifestyle. To be successful, you must begin your physical, mental and equipment preparation six months before you arrive in Alaska. You’ll have to be totally

involved with physical training, gear choices and purchases, training climbs, and planning even the smallest details of your trip.

For instance, the park service now requires you to register 90 days in advance of your arrival in Talkeetna. For this you'll have to decide who your partners are, a name for your group, and the air service you'll be using. After numerous and expensive rescues over the years, the Park service is now charging a peak fee of \$150 per climber to the privilege of climbing McKinley (as of 2005). Two of the questions on the Park Service form are revealing:

1. List the glacier travel peaks you have climbed.
2. What is your medical experience?

In other words, don't make McKinley the first glacier travel peak, and get some more-than-basic first aid experience under your belt. (Reference Paragraph 4.5 First Aid kit and Medical training:)

Consider the shape you're in. Climbing McKinley is a grueling experience of long days hauling extreme loads up steep slopes covered with ice and snow. Snow has to be melted to get water and you'll drink at least 5 liters a day. Preparing food is a real chore and you have to eat 3500 calories a day to keep from losing weight and or running out of energy. How many days in a row have you exercised for at least an hour a day? Two hours? How about 6 hours? The normal day is 6 - 8 hours carrying those heavy loads, and then digging a pit 8 ft in diameter and 4 feet deep for your tent. Not an easy thing. Run, bike, swim, hike and ski to get ready. Best would be to spend some time in the month preceding your trip at altitude to begin the acclimatization process. In 2005, I was 46 and recovering from a bad cold when I hit the mountain. I was very glad I had started a rigorous exercise regimen early on January 1 giving a "reservoir" of fitness to draw upon..

## **2.6 Attitude and Success**

Successfully climbing Denali is as much about your mental toughness and physical stamina as it is about your technical abilities to handle the climb and 3 weeks of winter camping. The conditions will play games with your confidence, your fears and your sanity. Steve Eckert and I figured that if one had the right mental make-up to be able to wait several weeks at 14k ft for the perfect weather window, climbing "Big Mac" really wasn't that hard. All you needed to do was ferry enough food and gas up to Genet Basin at 14k to last for 5 weeks, and then wait for the obvious perfect weather window. In fact, we met someone just like that on the peak. An Eastern European ski instructor named Adrian who was climbing the mountain alone. He had hauled up a bunch of food to 14k and was bumming more. This was his summer vacation. He had his skis and would simply wait for the weather window. He apparently did this every year and had some first ski descents on the mountain to his credit. He lived alone in his VE25, ate cast off food, cooked using bummed gas, and generally was a rather unpleasant fellow who would call out obscenities at any person who passed too near his snow hole. My guess is his anti-social behaviors were not the singular result of being alone on Denali for a couple of months, but hanging out at 14k in below freezing temperatures all summer couldn't have helped.

Pick your partner, your books, your radio and your I-pod tunes carefully as they may be your only link with reality.

## 2.7 Picking Your Partner(s)

This is the most important decision you will make: not the route; not the type and amount of food; not the tent, sleeping bag, or boots; no, picking the right partner means more than *anything* except your own experience. Pick someone you know well, can get along with in stressful situations and have the same goals and aims for the expedition as you do. Make sure you discuss, and if need be write down, what those goals are (these goals should be beyond the obvious one of making it to the top), how long you can take to do the peak, what route you plan to follow, what to do in case of emergencies, what stages you plan to do, how many and where will you take your rest days.

- Will you share food?
- Ski or snowshoe for transportation?
- Who buys the tent and rope? Both will get heavy use and may require the non-owner to reimburse the owner for wear and tear on major items such as \$600 tents, and \$160 ropes.
- Practice crevasse rescue and agree on how you will do this. Don't just read a book on the subject. Go out and do the real thing over a bridge if you have to.
- Has your partner been successful on higher peaks before? Have they climbed to 20k feet before? This is very important as some excellent climbers do poorly at 15k and above.

Consider the genders of your partner(s). This is an inner question for you to answer for yourself. Will there be sexual tension of any kind? If you go with a couple and are the only single person, will you be "left out?" Will they ask you to "step outside" in a raging snowstorm so they can make whoopee (don't laugh, it happened to me in '89!)

Have you been on trips with your potential partners before? How do they react to stress? Do they continually come unprepared for hard trips – not enough or the wrong kinds of clothes and gear, "borrow" food and fuel, don't equally share the load of group equipment, have bad manners and or hygiene, easily get "summit fever" and tend to leave the group in an all out push for the summit. Summit planning in a bar is a great fun over a pint of beer, but when its cold on the mountain, will they leave you when the going gets tough?

This is the stuff you'd better discuss out in the open before you set foot on the glacier. Evaluate the answers carefully, these are folks you're going to spend 3 + weeks with. Last, write your decisions and planned schedule down and take it on the mountain. While it may not settle arguments, the very act of writing down your agreed plan help ground your group on what your plans are.

## **2.8 When to go and how long to budget**

The peak has been done by a number of people in a single day from the landing strip at 7k feet on the Kahiltna glacier to the summit and back, but these folks generally were returning from the spring climbing season in the Himalayas, and used skis for transport up and down Denali. Generally however, most climbers budget at least 3 weeks, and bring food for 3.5 weeks, plus have a bit more stashed at the landing strip in case you can't get a flight out when they want to. You should prepare your boss, significant other, parents, and friends for a long trip with no news from you. In this era of instant communications nearly everywhere, this is one area where communications are spotty. While cell phones will reach Genet Basin, and I suspect the summit, don't count on it. Satellite communications the exception to this rule and if you must be in contact, see paragraph 4.2.5. Also, just because you are "overdue" does not mean you are in trouble. It could be no one has been able to get on or off the mountain for a week and you're one of the one's stacked up at Kahiltna base waiting for a plane to take you home.

Best time to go? Early May thru mid-June. Any earlier, and it's too cold, any later and the crevasse field has changed from small cracks covered by firm ice bridges into a jigsaw puzzle of yawing monster slashes hundreds of feet deep, some hidden by thin coverings of snow every 100 yards.

Reference - Table 7: Climbing Schedule Comparison in the back of this article.

### **2.8.1.1 Anecdote: Crevasses and throwing the "Poo bag".**

On our descent in 2005, Joe and I dug up the cache we had left at camp 1, 8,000 ft, where we had stashed some extra food and gear, plus a plastic "poo bag." Park regulations say you have to dispose of poo bags in deep crevasses. When we camped at this very spot 2 weeks before no crevasses were visible. Now, a small V shaped hole 3 feet long by 1 foot wide had opened up not far from our former camp. Someone had marked it clearly with wands as it was near the trail so this seemed like the perfect spot to make a "deposit." Joe put me on belay (one NEVER goes anywhere outside of a probed area without being on belay) and I walked over to the side of the crevasse and threw the bag in. It bounced off one side then the other, before disappearing into what appeared to be an inverted "V" shaped hole where it began a long fall. I counted 1..2..3..4..5..6..7 ... then a muted thump as the bag finally hit an obstruction far, far below. The glacier was very sill that morning and even though Joe was 30 feet away holding me on an anchor, he could hear the delay as well, and knew just how deep this hole was. "Get the F\*\*\* out of there!" I didn't need any coaxing to move briskly away from the lip of this innocent looking crevasse. This hole that we had nearly slept on top of two weeks ago was hundreds of feet deep, and clearly much longer than what we could see!



**Figure 4: Throwing the "Poo bag" at 11k into a monster Crevasse**

This rather full "poo bag" is the result of our team's 4-day stay at 11k. Joe has walked to the edge of a monster crevasse at the edge of camp with in full harness and Prussik gear. He's also wearing a pair of disposable latex gloves and washed his hands with some hand sanitizer after hauling this waste to disposal. Transmission of bowel distressing diarrhea is one of the most common illnesses suffered on McKinley. Protecting you and your team from this common problem is easy with a few simple precautions.



### 3 Equipment:

#### 3.1 Tents:

Buy and practice with, the best bombproof, 4-season tent you can get. Weight should NOT be too large a factor in making your choice. Let's face it you'll have to haul around a 8 – 12 lbs for a 2 –3 person tent, and anything less than that and I'd question wither you have one that reliable in the extreme weather you'll be encountering. Shaving a pound or three here, may not make sense – especially if it is split between 2 – 3 people. Of course, those doing technical routes where tent platform space is a HUGE consideration, will want to consider a small foot print as the primary selection factor, but for everyone else doing the standard routes on Denali, the big dome tents work well. The most common tents used on the mountain successfully are domes; two person double wall tents and the Bibbler-esk single wall Gortex tents are also seen, but less commonly so. Remember the following points when choosing a tent to use on McKinley

- 1) You're going to be spending a LONG time in this STRUCTURE. It should be large enough to be comfortable for you, your partner, and most of your gear for DAYS at a time. Skimping on weight here for the sake of saving a pound is foolish in my opinion.
- 2) Get a tent with a vestibule. You'll need it to cook in and store your gear when it snows. Try putting gear in the vestibule, is it big enough for backpacks, boot shells and still have room for a stove?
- 3) I've never used a single wall tent on McKinley, but they say they frost up in really cold weather. Additionally, I have noticed that my single wall tent "sweats" excessively when the dew point and the freezing point are near one another. I've had to bring along a sponge to eliminate all the water. This may be fine for soloists, but they may be a bit cramped for two.
- 4) A gear loft is a useful thing to get stuff off the floor of the tent that you don't want trampled or wet. On rest days when the weather is sunny and "warm" we found the top of the tent reached 80 deg F! Plenty warm to be able to dry out anything that was damp. So bring along a cord to string a clothesline on the inside.
- 5) Bring a small sponge to mop up the floor with – you will spill your food, or have excess moisture to take up when coming in from shoveling duties.
- 6) A small Wisk broom helps you take the snow off your fellow climbers before they come into the tent during a snowstorm. A seemingly silly thing, but moisture is the enemy of down, and too much of it and you'll sleep cold for many nights.
- 7) Use snow (tent) stakes to hold down your tent. Plan on using as many stakes as you have attachment points. There's more than one story of tents getting blown around. I personally saw a fully assembled dome tent get blown all the way from 16k to 14k down the West Buttress headwall. Don't plan on using your poles or skis, as there will be times when your tent is one place and you and your poles will be in another.
- 8) Consider bringing an extra tent pole with you. The winds up high get howling at 50 + MPH. Broken poles are not all that uncommon, and in a tent with 4 poles, one is not all that much to bring. Additionally my VE25

allows me to put double poles in most of the positions. At minimum, bring a pole repair kit and know how to use it.



**Figure 5: Snow Wall surround tents at 14,000 ft, poor weather Clouds and Mt Hunter in the background**

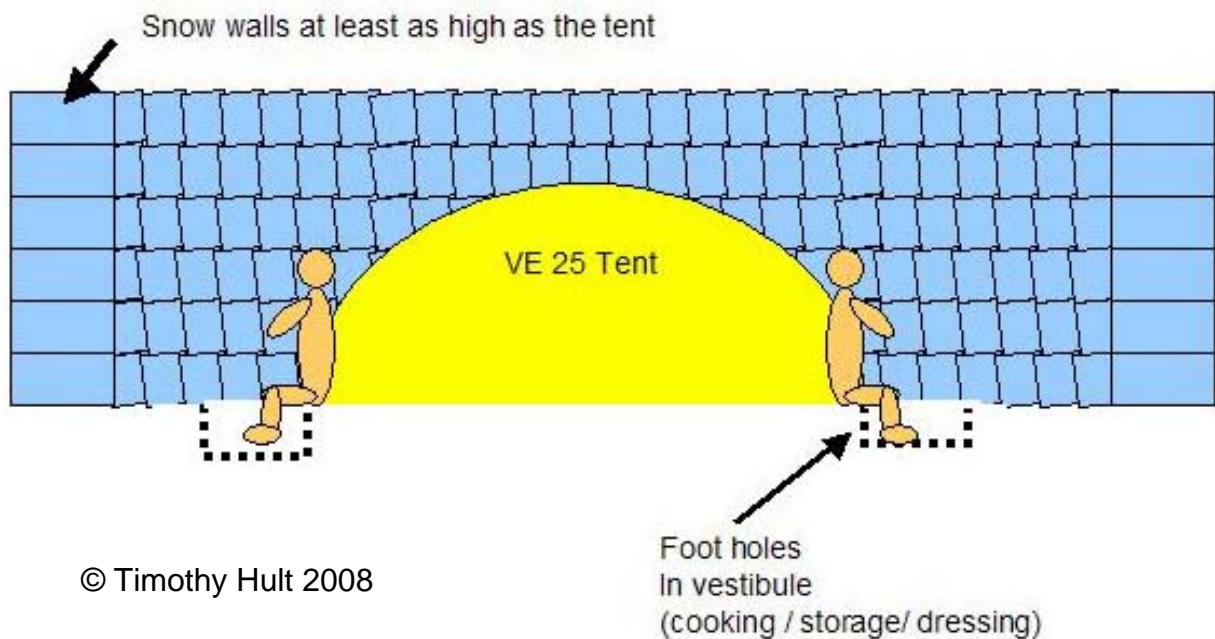
### **3.1.1 Thoughts on Pitching your Tent**

There really is a right way to pitch your tent on McKinley.

1. Dig or find a hole (or build walls) that your tent will fit in with at least 2 feet of clearance all the way around – more for the doors of course. You'll need this space to both serve as an accumulation zone for snow that sluffs off the tent, and as a place to walk when you're shoveling all that snow out of the snow hole.
2. Your hole should extent at least 2/3 of the way up the side of the tent. Deeper is usually better as this will allow the wind to pass over your tent without rattling it too much.
3. Consider digging a "foot trench" in your vestibule. This should be deep enough for you to sit in the door of your tent comfortably with your knees bent. This hole has many advantages: it doubles the storage capacity of your vestibule; provides a place to comfortably put your boots on while sitting; allows the "cook" to sit while tending the stove – which is usually sitting just outside one of the open vestibule doors; provides a place to take a sponge bath in all kinds of weather in private (not a small thing when you're on the mountain for 3 weeks). If your tent has a front and back

doors, you may want to consider putting a foot trench in both doors if you'll be in a spot for several days (11k, 14k, and 17.2k are likely places).

4. Use snow anchors on all the main guy lines. In some cases you may be able to use the fabric types that you fill with snow and bury, but in some camps, these will be useless due to the hardened snow / ice of holes that are a month old. For these, you'll need Aluminum snow stakes. Don't skimp here, bring one for each of the guy lines on the tent. If you own a VE 25, you know that it has an impossible number of tie down points that you wonder why they are there. They are there for use on mountains like McKinley! In a monster storm, you'll understand why. Leaving any part of the tent to flap in the breeze is an invitation to have the tent shredded in a 75 – 100 mph gale.



**Figure 6: Proper Tent Pitching in a McKinley Snow Hole**

#### **3.1.1.1 Anecdote: McKinley isn't a three-season mountain:**

Steve Eckert and I saw a fellow in '97 with a 2 1/2-season tent that Steve has a copy of and we had used in the Sierras. Roomy, long, with a large vestibule for all your gear, hoops for holding its shape, doesn't weigh much because the sides are covered with mesh and there is no longitudinal pole structure. You know the type, mesh sides, big Tunnel style tent with out a ridge pole to provide support in snow loading conditions, nice and light, great for summer backpacks in fair weather ranges. How he managed we don't know, but the last time we saw it pitched high on the mountain, the owner had stacked snow blocks right next to it in a (vain?) attempt to keep the snow from blowing in through the mesh sides. We knew that Steve's tent had a hard time keeping blowing rain out even in the Sierras, and can only imagine what happened when it snowed two feet every night in a howling gale!

### 3.2 Personal Equipment (Hardware & Such)



**Figure 7 Our Group's Climbing Equipment Stash at 14,000 ft**

Note: We put all our sharp objects outside the snow walls so as to not have any chance of tearing the tents or tripping on them. We also grouped everything together so we could find it after a snow storm covered them. It's a good idea to put at least one shovel near the tent door each night in case you need it to dig yourself out after a big dump. You'll also note the insulation around some of the ice axe heads, and the leashes attached to each. This insulation keeps the axe head from conducting heat out of your hands through the metal axe on long cold days. Be careful when installing this however as it should not interfere with your ability to self-arrest or chop steps! Use scraps of blue foam to create the insulation.





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Photo credit Steve Shields. Copyright Steve Shields 2008

### **Figure 8 Tim Hult Skiing up the Kahiltna – 9,500 ft**

You'll note how we rigged out bags on top of the sleds, tied these to our packs, and ran the rope from our harnesses over the top of the sleds and out the back to our partners who skied some distance back ready to do an arrest in case of a crevasse fall.

### 3.3 Personal Equipment List

**Table 1: Personal Equipment List**

1. Shovel. One member of the party should have a large capacity shovel (“grain scoop” shaped) another member should carry a smaller shovel for shaping snow pit floors. You will have to move A LOT of snow! Think big when thinking shovels!	2. SPF 30+ of sunscreen I carry on a stick around my neck for constant use whenever I get the chance. Is NOT a substitute for item 3 however.	3. Tube of SPF 50 sunscreen (total block is better) everyone has their own tube. Don’t scrimp here! Make sure your sunscreen doesn’t freeze by putting it in the freezer Check this out! Get some with Parasol 1789 for the best UVB protection.
4. 2 pair of glacial glasses (ever gone snow blind?!) bring two in case you loose / damage one. Most climbers use a nose guard as well.	5. Skis (rondenee) or snowshoes. I prefer skis. You move faster and I believe safer. Also climbing skins, skin wax. Your climbing boots must fit your skis.	6. Ear plugs and eye shades. The wind will flap the tent all day/night long driving you crazy. The calm ear plugs can give you is priceless.
7. Climbing skins cut and shaped for you skis. Full length & width	8. Skin wax (or anti-glop spray). Pre-treat your skins with hydro-phobic spray before hitting the mountain.	9. Binding repair kit for skis or snowshoes. (Screw driver, epoxy, extra screws, bailing wire, pliers)
10. Snow saw for cutting blocks for walls. This should be a beefy thing. Very heavy duty. Wimpy ones that work in Colorado or The Sierras don’t work well here.	11. Altimeter / watch / alarm 12. A small square foam “sit pad” made from an old ensolite pad. This may also be a small therm-a-rest pad.	13. Books! Plan on at least 2-3 each * Paperbacks work well as they can be torn to share
14. Snow shoes – if you don’t ski.	15. Expedition backpack. 4500 cubic inches or greater.	16. Drag bag or duffle for sled.
17. Harness, locking carabineer (large gate! and locking mechanism), pulley, ascender, prussic.	18. Ice axe: I wrap the head with foam to keep it from conducting heat away from hands (a BIG deal).	19. Sleeping bag (-30F min) A Gore-Tex cover keeps it dryer. I prefer down. 20. Two sleeping pads for each member
21. Insulated cup with top (prevents spills)	22. Two sets of plastic utensils: kept in 2 places	23. Personal toiletries, & First aid kit

24. Bowl with screw top lid. Allows warming of Freeze dried food without risk of spilling in the tent *	25. Knife with scissors, maybe one with pliers for repairs. This is not for the ‘Touching the Void’ maneuver!	26. Hinged crampons with tip protectors- you’ll be storing these more than you wear them.
27. Toilet paper & lighter in the same doubled H2O proof bag. (may want to double up on the TP)	28. Sewing kit for repairs. Heavy thread, large needles	29. “Duct tape” for repairs. Wrap around water bottles and ski poles
30. Camera, film, camera bag, extra batteries. Use < 100 ASA. If using digital, bring extra batteries (2 sets at minimum and lots of storage capacity	31. Ski poles. Collapsible ones. I prefer the flip lock kind – these don’t “automatically” self adjust as the twist type do. Consider the kind that a self arrest head may be added	32. Crevasse rescue anchors: everyone carries their own! Knows how to use them! 33. Ice screws. One each. Best you can buy – easy to set.
34. Zip lock bags – Quart and Gallon size. You’ll have some left over from your food, so go easy here.	35. Wide mouth water bottles (2) with matching insulated bottle carriers. These must cover the entire bottle including the top. OR makes some nice ones yourself	36. For summit day you may consider bring a collapsible wide mouth water container to increase your H2O supply. I also have a pint bottle in a waist carrier.
37. Writing tablet and pen (optional) 38. A small square foam “sit pad” made from an old ensolite pad. This may also be a small therm-a-rest pad. You’ll be glad you had it.	39. Pee bottle. Wide mouth, choose your capacity wisely. Label it clearly as PEE BOTTLE!	40. Ascenders. You’ll need these to get up the 50 deg slopes to the West Buttress with a 70 lb pack. Make sure you can work them with gloves or mittens on.
41. Knee brace – optional some of need one (or two). Elastic “ace bandage” tape is a good idea in any event for shoring up those failing joints	42. Back brace. I put this in here as a number of my friends now swear by them to relieve pain after a day of carrying monster packs. (It’s an age-thing.)	43. Ice Screw. 1 per person. Get the best you can with shape teeth for easy insertion. You probably won’t need it, but when you do, you’ll be glad you carried it – as we were in 2005.

### 3.3.1 A word on Books and other Diversions:

Books and puzzles may be the best instruments for keeping you sane while the storm rages outside. Make sure to bring at least 2-3 EACH, and make sure each member of your party wants to read the books the others brought. Both times on Denali I've read 5 books, including Bruce Catton's "History of the Civil War" - twice. I know it sounds funny, but my other unread books were at 17k while were stuck at 14k for 3 days – besides, I'm now something of an expert on the American Civil War. Action books seem to be a better choice than scholarly ones – though we saw someone with a bunch (3 – 4 thick tomes) of Greek Philosophy books in '97 – and unless you have a suitable partner, avoid books with too much sexual content. Also paperbacks that may be ripped in half and shared among tent mates burned, used as TP, or otherwise traded off to other groups seem to be good choices.



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**Figure 9 Joe Burton Working Cross word puzzles at 17,200 ft**

### 3.3.2 Photography:

I'm a shutterbug (photography enthusiast), and some of my favorite images are from my three times spent on Denali. Each time, I've taken two cameras: a full sized film 35mm SLR with two lenses: a 28 – 105mm f3.5 zoom and a 24mm f2.8



fixed; plus and a small, low tech, fantastic optical quality Rollei 35 (no longer made). The Rollei doesn't require a battery for anything but metering, weighs nothing and has a great German (Ziess) lens. This is my summit camera. A similar one for you may be a more modern digital point and shoot, but just make sure its one you can adjust the ASA to handle ASA 100 or less, a built in neutral density filter, or have very small (high f numbers) available. While I really like film, the digital revolution has won me over and if I went again, I'd take an all-digital photo kit – see below

### **3.3.2.1 Film Photography:**

This section is from the first version of this guide written in 2004. Film has now been superceded by digital technology, but some thoughts are still relevant to the digital age.

Use only “low speed” film (or set your ASA value on your digital camera to a low number), there is LOTS of ambient light on Denali, so don't take anything higher than ASA 100 for the trip. The one exception to this rule is that you may want ASA 200 for the flight in and out as you'll be taking photos from a moving, vibrating platform and a high shutter speed is mandatory (recommend 1/350 sec or higher, 1/500 – 1/1000 is better). For the rest of the time on the mountain, ASA 50 works well and ASA 200 is useless unless you like shooting at 1/1000 and f22 all the time. Besides, I find ASA 200 color slide film too grainy, and the better color films are all in the lower ASA range. Tripod: I brought a very small plastic mini-pod that fits into my hand. I can mount it on an ice ax, or a ski pole, or deploy the tiny legs and set it on a pack. How many rolls? I brought 5 - 10 rolls of film (in the digital world this may translate to a 2 – 4 Gb card capable of holding 360 shots done in RAW format) This may be too much for you (then choose 5), but remember this is a trip of a lifetime, it would be a bummer to run out the day before summit day, or find the weather was spectacular on the way down and you didn't have any film to record the views. Why skimp on the film that weighs little? Practice shoots and metering in these sorts of conditions. The best advice I can give you is to choose a camera with a spot meter and always meter on the “middle tone” in the scene. For those of you that don't know, the middle tone is NOT the snow – your gloved hand can be middle tone if you know how to calibrate it correctly. In short, pick up a book on the subject, and practice with a roll or two before you go.

For all three trips to the mountain I used essentially the same photography kit: a compact SLR with two lenses, and a small, all manual point and shoot 35mm. In 2005 I took my Cannon Rebel SLR, a single 28 – 105 lens, a fixed 24mm lens, and my Rollei 35. This kit doesn't weigh very much, gives me great pictures and uses lithium batteries, which will last in the cold for one entire trip. I also brought a polarizer, a UV filter, screw on neutral density filter, and a 81-B warming filter. I left the heavier, fancier SLR (Canon EOS 3) at home, as well as the longer telephoto lenses. I have also been putting B&W film (Afga Scala 200, de-rated to ASA 100) in the Rollei when it's not on a summit mission and have been very happy with the result. 2008 update: sadly, Scala is very difficult to find and even harder to have process.

### 3.3.2.2 Digital Photography

In 2005, I brought along the analog kit mentioned above and got some nice shots, including some great “art” shots with my SLR that aren’t possible with a point and shoot. but Steve Shields and Joe Burton both brought high end point and shoot digital cameras and produced some terrific “grab and go” shots not possible with an large SLR. Steve’s was a small “clam shell” model that he bought just before the trip and kept in a “ready case” on his pack’s shoulder strap. Joe’s camera was a bit larger and required more fussing to get out of the pouch, but arguably took better pictures. Both Joe and Steve had extra batteries and brought plenty of memory cards (1Gb is the minimum as both climbers shot 300+ pictures, but consider the maximum file size your camera puts out per shot, times 300 then leave yourself at least 20% “headroom”). Turns out, having a quality point and shoot camera was the photography innovation of this trip. Steve got some great pictures because all he had to do was “whip” it out of the shoulder harness and push the button. My analog images were fine, but I had some difficulty in exposing the B&W film and then there was the hassle of wrestling the SLR out of the chest harness pouch at key times. The best part was being able to share the photos immediately after the trip. I had to tediously sort my slides; clean them; scan them; post process (“Photoshop” for color correction, etc.); then combine them with Steve’s and Joe’s to generate a slide show – which is terrific by the way.

Technical notes for Digital cameras:

1. White balance. If you are going to shoot digital, be sure you understand the concept of white balance and how to set a custom white balance on your camera. Typically, the “sunny bright” setting isn’t sunny bright enough at altitude (I suspect it needs to be set at 5000k, or possibly even 4800k not the usual 5200k). If your camera allows setting two custom white balances, set one at custom sunny using a grey or white card (snow is NOT white) and using the same card, set one for stormy / cloudy days. You’ll be glad you did.
2. ASA. Bring a camera with as low an “ASA” setting as you can find. ASA 100 is the minimum. Some digital cameras have an ASA 50 or 80 setting which is better. Alternatively, be sure your camera has the ability to stop down to high f numbers or has a built in neutral density filter that can be electronically engaged. On Most pocket cameras this is only f8, if equipped with a an electronic neutral density filter ½ the light will be cut, meaning your f8 camera becomes f16 equipped. It is SO bright on good weather days, you’ll need this or you’ll be shooting at 1/1000 all the time.
3. Shooting in RAW. Most point and shoots do not allow shooting in RAW, and for most casual photographers this isn’t necessary, but for those that want the best possible color and image quality, RAW files allow resetting the white balance in a post processing step. This may be an image saver when the storm clouds roll in and your camera is still set to “sunny bright” and the “AWB” (automatic white balance) feature becomes confused with all the reflected light. Beware however that these files can be 2 – 3 times as large as the standard Jpeg image so your flash memory cards should

- be correspondently large. I would suggest you have some idea of how many images in RAW you can fit on your card before you go. My current “pocket” digital camera is a 12MP Canon G9. This amazing “prosumer” point and shoot camera has the ability to add on both an extension wide angle and a tele’ lens (requires a special fitting over the lens that also accommodates standard polarizers and colored filters for B&W), put in an electron neutral density filter, shoots at ASA 80 – 3200, Canon RAW and Jpegs simultaneously, a very bright screen, and without add-on lenses fits in a shirt pocket.
4. My G9 It will store about 300 – 350 RAW images on a 4GB flash card in raw. This *may* be enough for a Denali trip, but when I shoot in digital I shoot quite a few images, so I’d bring two of these storage cards. If you are considering a trip to Denali park for some wildlife shooting and have no way of downloading your shots, consider bringing even more storage.
  5. Dynamic Range and where to meter: One of the big shortcomings of the current crop of digital cameras is their inability to capture high dynamic range (HDR) scenes. Frankly, modern films do a better job at HDR than most native digital sensors without extensive post processing work. While I’m sure this will improve over the coming few years, it may never reach the point and shoot market. This is a problem on a mountain like McKinley, but not un-workable if you are careful about composition, and metering. Generally, one should expose for the highlights of interest just as you would in the film world. Beware of the “blinkers” showing up on your shot review screen. These indicate the scene has “blown out” the sensor and all information in that area can not be recovered in any post processing action afterward.
  6. Power: Bring extra batteries for your camera! Trusting you’ll only use one isn’t a good idea especially since there are not recharge sockets on the mountain. One spare is a good idea, two spare batteries is even better. If you’re a heavy shooter, bring a solar charger that will charge all your batteries: camera, GPS, radios (FRS, walkie-talkie, AM/FM, maybe your cell phone). Remember, you won’t need a headlamp on Denali in May / June. Batteries do not perform very well in extremely cold conditions, so the number of shots you got using a single battery on a summer week long backpacking trip isn’t a good guide for McKinley.
  7. Be familiar with all the functions on your camera before you go. The best shots are often those that someone “grabs” without time to pose, set up or adjust settings for. Having the ability to operate the most important buttons with gloves on is another key factor to consider when choosing a camera to bring.

### **3.3.3 Sleeping Bags**

High altitude mountaineering is a cheap sport compared to say sport fishing for championship Marlin off the Cuban coast or around-the-world Yacht racing, or season tickets for a pro Hockey team with seats center ice and on the glass isn’t cheap either. So every sport has its costs, and in our sport the expense is the buying all the specialized, extremely well made gear. Aside from a tent, the most expensive part of your kit will be your sleeping bag. Here the desire to save

money is often acute with a correspondingly high rationalization factor of “I’ll only use this once.” Good expedition winter bags with a water resistant cover can run \$500 to \$800 (that’s right more than a good 4-season tent!). So the urge to save on this one item is large. Don’t give into this urge. A quality sleeping bag can make or break a trip to a high mountain like McKinley. The temptation is to buy a sleeping bag with a range of say –20deg F instead of one with a range down to –30 deg F is understandably large with the logic that says, “I’ll only need a –30 deg bag for one to three nights, and I can live with that.” Well, maybe you can, but for the money you’ll save (\$100 - \$150 if you are buying a down bag) I don’t think it’s worth staking your comfort or your life on such a savings. A –30 deg F bag should be good enough, but you may be able to buy a 900-powder fill down bag for not much more money that is good for –40 deg F. The difference between a –15 and a –30 deg bag is large and well worth the expense. The warmth is instantly felt in a warmer bag and you’ll not worry about staying warm on the coldest night of the expedition. I own Western Mountaineering overstuffed Big Horn bag rated to –35 deg (~\$700). I love it. Sure, I don’t use it very often, but I’ve gotten good use out of in Nepal, S. American and of course on Denali. Occasionally, I’ll take it out on Mt. Shasta in the winter as well, and Christine and I have camped at Yosemite’s Tioga Pass (9,000ft) in the dead of winter using these bags. My 2005 partner Joe Burton, has a Marmot Cwm Eq (-40) bag (\$669) and loved his. We never regretted our purchases.

The negative side of down is that if it gets wet or damp, it will lose its warmth. Climbers spend alot of their time in the sleeping bag on McKinley and your body sweats when you’re in your bag which will accumulate over time making your wonderful –30deg bag into a –10 deg bag rather quickly. To combat the accumulation of moisture in your bag, it’s a good idea to air your bag out whenever you get the chance. This will keep your down bag as fresh as the day you brought it on the mountain.

If you want to save money, there are a number of very good synthetic bags on the market that are good down to –30 as well. They are not only cheaper by several hundred dollars, but have the advantage of not being as susceptible to body moisture accumulation. The down side (pun intended) to synthetic bags is they do not compress as much as feathers, and a good –30 deg synthetic bag may fill up 1/3 of your pack’s volume.

Mountain tip. When draping your bag over the tent, be sure to tie it to one of the guy lines to ensure it doesn’t blow away in a sudden wind gust. Yes, I’ve seen this happen.



**Figure 10 Joe Burton in his Big, -40 F/C Down Sleeping Bag**

### **3.3.3.1 Anecdote: Warming from the inside out**

The day we moved up to high camp at 17.1k in 2005 is one I'll never forget. Joe Burton and I were "behind" Steve and Scott in our acclimatization schedule due to a storm and missed opportunity to move up some days earlier. They had been higher than we had, and had climbed on ahead of us. Now, Joe and I were making our way up the W. Buttress ridge from 16.1k to 17.1k at a snail's pace. The climbing isn't hard per se, but the scenery is as spectacular as it is dangerous. Carrying a heavy (55 lb?) pack (we didn't do a carry the day before) we were hammered as we moved the last quarter mile toward the col where high camp is situated. Like many other days on Denali, we arrived in camp with little left in our energy tanks. Fortunately, like he had several times before, Scott was there to greet us, help us out of our packs and get us settled by putting up the tent. We hadn't eaten for 8 hours or more, had run out of water (2 liters), the wind was kicking up, and it was already below zero degrees F. It was going to be a cold night. While Joe and I got some soup from Steve in their tent, Scott set up our tent. When we returned, we found our bags laid out on top of our blown up sleeping pads all ready for us to crawl in. I was chilled to the bone – literally. When I got into my bag I was shivering badly and found it hard to get out of my damp climbing clothes and into a dry pair of long underwear. I knew my body core was cold and I was pretty close to getting a case of hypothermia: it was a very good thing we were in a safe spot with friends! Joe said he too was really cold. After lying in our bags for 5 – 10 minutes and eating an energy bar, we both felt as if our extremities were being warmed from the inside out- a very

strange feeling indeed. That night it dropped to - 25 deg F, but in a testament to buying good equipment, I hadn't felt the cold at all in my -35 deg bag. -Another way to add warmth would be to add a silk inner liner to your bag, which should add another 5 deg of warmth.

### **3.3.4 Sleeping Pads**

This is one area where you can lose a lot of heat, and since you are in your bag for days at a time, skimping on weight here makes no sense. I use two pads when I'm doing a winter climb: one closed cell foam pad, and one Thermarest self-inflating mattress. I like the versatility and comfort the self-inflating Thermarest pad gives me, and the "Ridge Rest" closed cell foam pad provides a fool proof insulation layer that an ice axe can't poke a hole in. The Thermarest pads are nice in that you can vary the firmness (inflation pressure) on these pads, a very important consideration during a three-day storm. The first two times on McKinley ('89 & '97), I carried a 1/2 in closed cell foam pad (flat blue) and a full-length light weight Thermarest (1/2 inch). In 2005, I went for luxury and carried both a closed cell Ridge Rest (not available in '89) and a full length, expedition weight, 1.25" thick, inflatable Thermarest pad. This combination weighs more than the previous one, but I *never* slept cold and could always adjust the firmness to my comfort needs of the moment. In fact, some nights I slept nearly as well as I do in my own bed. In my and Steve Eckert's opinion, using a Ridge Rest for your bottom layer may have some draw backs as it may provide more contact area with the snow when it inevitably "melts in" to the snow on a multi-day campsite, but when paired with an inflatable top layer pad, the ridges will trap an insulating air pockets between the pads, so the combination is probably warmer than just a flat blue pad. I can tell you my 2005 combination was definitely warmer than the previous times and well worth the extra weight. One may also consider the latest in sleeping pad technology by using an inflatable pad with built in insulation such as down. These are harder to inflate, but promise more loft (comfort factor) and huge insulation factors (R-values of 8 or 9) for not much additional weight; I would continue to use them with a solid foam pad however for the fail safe no puncture feature of closed foam.

In the equipment lists I also show a small "sit pad" made from a 12 - 18 in square piece of Ensolite (or blue) closed cell foam. This will save you from getting your sleeping pad out every time you want to sit on the snow. Something that will happen allot. It will also keep you just that much drier, and give you an extra layer under your shoulders at night in the tent, or sitting on the edge of your tent hole while you prepare dinner.

### **3.3.5 Drag Bags vs. Sleds**

I own an old "Wild Things" drag bag. Essentially, these are tear drop shaped bags made of the same material big wall haul bags. The principal feature is a large zipper running down the length of the bag and a loop at the front to haul it behind you, and be able to access the entire storage length in a single motion. I love this bag. It's waterproof, rugged and it slides almost as well "upside down" as it does "right side" up. This is a huge deal as bags and sleds tend to tip over

allot on McKinley, especially when you are traversing a steep slope. Unfortunately, I haven't seen these advertised anywhere for years. Steve Eckert gave up his search for one in '97 and made his own with a great deal of success (he's good at that sort of thing). In 2005, we found out from another party that Wild Things makes them once a year by special order. Scott Warner is also a very handy fellow with experience running a heavy-duty upholstery sewing machine and he made 4 new ones for our team using heavy-duty awning material sewn on a rented machine.

In 2005 we used the plastic kids sleds that the pilots offer at Kilhitna base to their clients. We put the drag bags atop these sleds to transport the drag bag on the lower part of the mountain. This saves some wear and tear on the bag, and I'm quite sure that on level terrain, the plastic sleds slide better. Higher up on steeper slopes however the sleds tip a lot and are hopeless, as they require constant attention. For this reason, I'd leave it with my skis at 11k. The big deal about the bags is that they are waterproof, so even if you plan to use a sled, buy one of the new waterproof duffle bags and secure that in a sled. That way, you can leave much of your stuff in this waterproof cocoon until you need it. I secure the bag directly to my harness, separate from the main rope, but found it was very useful to put a separate guideline on the bag as well to use to direct it when it got out of hand.

One HUGE lesson learned was how sensitive the sleds were to tipping over if you put ANY weight up "high." Don't do this. Keep all the heavy weight stuff down low next of the bottom of the sled. Use your unrolled closed-cell sleeping pad to provide a smooth sliding surface as the bulky items like fuel cylinders tend to dig into the snow through the bag. On the lower, "level" part of the mountain, it pays to put the heavy stuff in your sled. On the upper, steeper part of the mountain, you'll want the heavy stuff in your pack, and the bulky less dense stuff in the sled. This is an experimental thing that you'll have to mix and match to your own taste.

The last few years I've seen a new type of alpine sled on the market with an integral harness. The Mountain shop in Truckee (Tahoe) where I do a lot of business, The Back Country, has these on display. Heavy Duty short sleds, with integrated fabric tops with zippers. Poles stuck in both sides that then attach to a special waist harness haul these sleds. This arrangement seems to keep them from tipping too much on the steeper slopes. I don't think they are cheap however. In 2005 Steve Shields, who is on the ski patrol at Bear Valley resort (California) used PVC pipes to create a similar arrangement for his sled. None of the other of us tried this, but it seemed to work very well for someone who is used to skiing with a sled like Steve. We also ran into a fellow who was going solo on his 4<sup>th</sup> (or 5<sup>th</sup> ?) time on the mountain. He had used 2 pairs of old ski poles with carabineers permanently mounted to the top to his haul system. This also seemed to work well.

### **3.3.6 Hydration systems:**

The special forces uses them, bikers use them, they come with cool names, the dangling tube is a status symbol, heck I use them – but not on a big, cold mountain like McKinley. They freeze, they are hard to fill in the tent, they are hard to keep warm, and other hydration systems for mountaineering are better. Hydration is important and for lower on the mountain having a small 1 pt bottle on your hip belt will do the trick, but higher on the mountain, almost nothing will work that is exposed. My Down Jacket has an inner pocket that's designed to fit a 1-liter bottle. That's what I use it for. The other 2-liter water bottles I carried on summit day each go into foam filled bottle jackets with zip tops. Filling them with warm / hot water before leaving camp and putting them next to my back in the back pack help keep them warm over the long day ahead.

Thermos Bottles. Scott Warner brought a small thermos with him on Summit day in 2005. Having a cup of hot chocolate at 19,000 feet was a terrific. This is another item where the weight seems to be worth it.

#### **3.3.6.1 Purifying Drinking Water**

On all my trips I've used Iodine in solution to treat my drinking water. This is water you may not boil and with nearly 1500 climbers on the mountain every year, it can be hard to stay away from yellow snow or snow contaminated with blown fecal matter. I use a very simple system called Polar Pure that allows me to iodine treat 1000's of liters of water with iodine crystals from a small bottle.

#### **3.3.7 What is a PEE BOTTLE and why do you want one?**

So, you're well hydrated and it's a cold, stormy night. You are snug in your down cocoon and satisfied with the warm dinner 6 hours ago. You've got to go, but "going" in this storm means suiting up, and stepping outside. Or you whip out your "pee" bottle, and fill-er up. Stow it carefully however as you don't want to dump it inadvertently, and you certainly don't want to mistake it for the water bottle. Last, label it in big letters so you don't make that mistake for real. When you empty it out in the morning, be sure you dump it away from the spot you get your melt water snow from.

Special note for women on aiming and going in the tent – beware of using the same vestibule space that you cook in – unless your aim is really good. This is another good place to use the "woman's funnel."

#### **3.3.8 Vapor Barrier Socks.**

I grew up in the cold and changeable Northeast USA and my feet got frost nipped a few times early in life (grade school). So, I get cold feet easily and for that reason and one other, I wear a vapor barrier sock over the liner sock, under a heavy weight "expedition wool sock," then stuff the whole arrangement in the boot. This system adds up to more than a size above my street shoe. Vapor barrier socks have fallen out of favor in the climbing community in the last few years and I know why. They are a pain to use and very smelly after a few days, but for my money, they do one very important thing on a weeks-long, cold climb - they help keep your boot liner dry. This is a huge deal on a mountain where you



won't get much of a chance to dry your liners out, and warm dry liners may save your toes when you get up above 17,000 feet. To further combat sweaty feet, I use a bit of foot anti-perspirant and foot powder every morning. To be effective however the anti-perspirant needs to be applied for several days before the beginning of the climb. This means conditioning your foot to antiperspirant while still at home. Once it starts acting, your feet will not sweat as much as they otherwise may.

I also have a couple of pairs of boiled wool socks that are as expensive as they are warm. They don't have any fancy padding on the bottoms, and aren't made of fancy, synthetic "bi-stretch" material; just plain old simple, boiled, dense wool. They are the nicest things ever on a high mountain. On a big long climb, I have at least 2 pairs of these socks so I can wear a dry pair every day and put the wet pair either at the bottom of my sleeping bag or on the line at the top of the tent on a warm day. I always change my socks to a dry pair immediately upon getting into the tent at night. Dry socks and down booties keep your feet happy and healthy. Be sure to read the section about using anti-perspirant on you feet later in this document.

### **3.3.9 Skis vs. snow shoes.**

I've been skiing for 37 years, more years than many of the climbers who attempt McKinley are old. I'm not an expert in all conditions, but I'm pretty good, so this comment isn't either fair or unbiased: I don't do snow shoes. I see skis as both faster and safer for the following reasons:

- Skis span more area than snow shoes making it harder to punch through a crevasse
- With skis on, one can schuss down a hill on the return trip. This makes it possible, but unlikely, you can get two carries in a day. At minimum, skis will speed up your trip down the mountain for the last time.
- I find climbing with skis on McKinley is a straightforward affair up to the 11k camp where everyone leaves both skis and snowshoes. Don't forget to bring along skin wax to prevent them from glopping up however.
- The skis I use are a low-tech Rondenee (AT) ski with the old fashion Silveretta 404 binding. (Consider a newer Silveretta Pure binding that holds a plastic climbing boot fairly well, this is however sub-optimal for "performance" skiing – for that you'll want an AT boot). This binding allows me to use my plastic climbing boots on the ski without modifying either. While possessing neither top-notch performance nor elegance, it's a system that works reasonably well. Besides, if you've ever tried skiing with a 50 lb pack pulling a 50 lb drag bag, you know the fanciest skiing you'll do is some version of the snowplow or stem-kristy.
- Bring a repair kit: screw driver tool, spare screws, epoxy
- Don't for get to put a keeper leash on your skis so if they come off, they don't go flying down the mountain and into a crevasse.
- Do your skins fit the skis? Have you put new skin glue on them before the trip?
- Do you have enough duct tape to tape your skins to the skis if you need to?

On the other hand, skis can be difficult to maneuver in poor or icy conditions, and it is difficult for two people to ski in tandem while roped up. Skiing on McKinley can be difficult and simply not fun – even if you are an expert. Being on skis does not guarantee not falling into a crevasse as there is a skier still buried somewhere in the ice around the 10,000 level on the Kahiltna where he dropped into a hidden hole while skiing un-roped and alone.

For most parties of mixed skiing abilities, using snow shoes and remaining roped with a reasonable distance between members is the best choice.

### **3.3.10 Choosing a backpack.**

Don't take a new backpack that you don't have some experience with to McKinley. Use it for a while; understand how to fit it to your body with layers on. Know how to vary its load pattern from day to day. Can you put all the stuff in it and on it that you'll be carrying? Does it need new attachment points? How well does it carry 60 – 80 lbs when needed? Is it heavy duty enough to be used for 4 weeks straight and take a few rough blows from an ice axe with ripping out?

My current heavy-duty pack is a Dana Designs Terraplane. I love it. It's heavy, huge and carries like no other pack I own. I swear, for all its bulk, it carries a large load so well; the load feels like it is 20 lbs less. I also prefer having a single large compartment in an internal frame pack. This will allow you to customize the way you haul all the stuff you need to. A large top pocket is essential for the many items you must get to in a hurry. Last, make sure it has attachment points or loops for axes, ski poles, shovels, snow saw, snow pickets and water bottles. Toward that end, I've sewn a number of attachment points onto the pack so I can lash more stuff than normal onto it. I also lengthened several of the side cinch straps to accommodate large sleeping pad rolls. This was invaluable on the mountain.



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**Figure 11 Scott Warner Hefts his Monster Load at 8,000 feet**

## 4 Group Equipment

### 4.1 Group Equipment List

**Table 2: Group Equipment List**

<p>44. A map of the mountain. As well as an aerial photo of the route. You won't believe how useful this is.</p>	<p>45. Bombproof 4-season tent with Vestibule, bring snow anchors for all the attachment points for the tent!</p>	<p>46. CB radio. This used to be the standard on the mountain for communications. Check with the park service.</p>
<p>47. Snow saw? This "may" be useful for a larger party. Most simply dig a pit for the tent, but being able to actually construct a wall of blocks makes the shelter more bombproof.</p>	<p>48. GPS unit. Many parties have become lost on their way back from the summit. But DO NOT depend on this to locate your caches! It is NOT accurate enough. Mark your caches with stacked wands!</p>	<p>49. FM / AM radio. You'll spend A LOT of time in the tent. A little entertainment will help. Extra batteries (lithium AA will be worth it)</p>
<p>50. Snow wands to mark caches Use surveyors tape to make your group mark on the surveyors tape</p>	<p>51. Duct tape – for everything. Wrap around bottles</p>	<p>52. Repair kit. What happens if the tent rips, you crampon your bibs, etc.</p>
<p>53. Small compass – white outs do happen. It helps to take a bearing every once in a while.</p>	<p>54. Rope: an 8 or 9 mm dry rope will do. You may even chop this in half if there is only two of you.</p>	<p>55. A map of the state so you know where the storms are coming from. This could be a sketch map.</p>
<p>56. Stoves – see food and cooking. Bring redundant 57. Stoves and repair kits. Especially stove (pump) oil and plastic bags to keep the stove inside your sleeping bag on very cold nights. 2008 update: From the manufacturer - <b>New MSR white gas stoves do NOT come with the pump seal oiled!</b> Be sure to prep your stoves</p>	<p>58. Pots: see food and cooking</p>	<p>59. Miniature Wisk broom: Use this to brush off the considerable snow you'll get during a snowstorm before you enter the dry tent. This keeps the free moisture from getting clothes and down bags wet.</p>

before hand.		
60. Parachute cord: very useful for all sorts of things	61. Sponge for the tent floor	62. First Aid kit. Two kinds: Personal and group
63. Crevasse rescue instructions (the C-Z pulley system diagram) reproduced in miniature and carried on your person for ready reference.	64. Crevasse rescue equipment: picket / fluke, pulley, prussic – Practice with this stuff!	65. Stove pad – a small insulated pad to put your stove and fuel bottle on while cooking on the snow.
66. Plastic Garbage bags to put your buried cache in – Melting snow will soak into everything in your cache lower on the mountain	67. Iodine for water purification: with 1500 people climbing Big Mac every season, you may end up eating yellow snow.	68. Sewing kit for repairs. Heavy thread, large needles, curved needles. Put in puncture proof case.

#### 4.2 Radios, Cell Phones and Family Service Radios (FSRs):

AM/FM/SW radio; you can listen to the weather forecast for the rest of the state. This will help you figure out when a storm, or a BIG calm is coming. We found this very useful on the last trip. The park service broadcasts a daily weather forecast once a day on the CB - but if you miss it? I also took along a 6-foot piece of wire with an alligator clip at one end to use as a supplemental antenna. The clip goes on the end of the regular antenna, and the wire is strung around the top of the tent. Really helps suck in the stations – especially the SW stations in the evening. Steve and I found it entertaining to be sitting in the tent on the 3<sup>rd</sup> day of a huge storm sipping tea and listening to “The Blues Hour” out of Anchorage; likewise the news from the BBC, NPR, or VOA. Having a radio certainly broke the boredom quite a bit.

##### 4.2.1 CB radio:

The Park service in both `89 and `97 used CBs as the principal climber to Ranger communication tool. There is now a move to use FSR radios however (see below), so check with the ranges to see what they are currently making mandatory. Take the batteries out when not using it. You’ll only need it once or twice a day and in `89 we found ours went into a power drain mode, or would get accidentally turned on shortening the battery life considerably. That first year on Denali, we nursed our batteries through the entire 2 weeks after just since an incident. I would also bring the “new” AA lithium batteries. They are good in the cold and you get an amazing amount of use out of them. Using the CB in the tent. For folks interested in Physics: I have a VE25 dome tent supported by 6 crises-crossing aluminum poles. Turns out these poles form a Gaussian-sphere (Faraday cage) that inhibits RF transmission and reception. The CB worked much better when I stuck the antenna outside. My CB radio has the provision to put either a rubber stubby antenna or a longer 4-foot telescoping antenna on it.

The stubby is good for carrying the thing, but reception and transmission are greatly enhanced with the extendable one. If you pick one to buy, pick one with the most radiated power available (5w if memory serves). This will greatly enhance your communications ability. I would also look for one (if available) with a weather band capability. This will allow you to tap into the National Weather Services' transponder service whenever you want to for up to the minute forecasts.

#### **4.2.2 FSR (Family Service Radios – “Talk Abouts”)**

With the advent of the new FSR (Motorola *Talk About*) radios you may consider bringing these lightweight wonders for a larger party. Also check with the Forest service to see what they are now monitoring on the mountain. In 2005, we were told that the Forest service is now experimenting with using these as the primary means of communications with climbers. This is a good thing as the FSR's are smaller and lighter than the CB's they will replace, plus they use less batteries (weight savings) Because they take less space and may be useful after the climb, it may be possible for most members of your team to have one. This would make it possible for every rope team on the climb to stay in touch with one another even if separated. No small thing on a big mountain with many objective dangers. Be sure you can operate your FSR with gloves on, and know the various menus and ring tones before you leave.

#### **4.2.3 Cell Phone:**

Unless you are using a satellite-based phone, your cell phone is almost useless in the Kahiltna glacier gorge, as both the antenna on your phone and a receiving antenna MUST have a straight line of sight connection with no mountains in the way, and along the lower Kahiltna this isn't going to happen. My advice is to leave it behind, as it brings nothing to the climb but a bit of weight and a false security blanket. I believe it is much better to invest in a good CB radio (or see discussion on FSR radios above). I suspect that once you are on the ridges you'll be able to make Cell phone calls, but only within the limits of the cell standard provided in that area. My experience in 2005 was my Verizon phone (CDMA) would get a pretty good signal at 14.2k camp, but the calls were always dropped even when they connected. Fortunately, the phone I brought had the capability to “force” it into analog mode (AMPS – analog mobile phone system, which is now archaic and will soon be phased out in the USA). Analog mode, allowed us to always connect. Beware, analog mode drains your batteries very, very quickly. With a GSM phone (Cingular and “old AT&T”) it is doubtful you'll get a signal, or the call will drop because the extreme distance from the antenna mounted on a pole by the side of the Parks' Highway. (Normal GSM is only good for about 5kms, Normal TDMA is good for about 5 mi, and Analog can produce a good signal for about 50 mi). While I don't know if the version of GSM used in Alaska is or will continue to be, “normal” it is a fair bet the bandwidth intensive, long-range AMPS will be phased out. Therefore, I think it is only a matter of time before “regular” cell phones are useless on Denali.

#### **4.2.4 2m Single Side Band Radio.**

Two meter single side band radios are FM line of sight radios with limited use in a place like McKinley, but Ham radio people are always keen to experiment with their toys. In the last 80's my friend Dan Tupper managed to dial into a repeater near Anchorage that relayed his call from the summit to his wife - then the speaker froze up. For the rest of us, I'd leave it at home, but I'm sure it does have a place in the remote north of Alaska so this repeater system will continue to be in place for some time to come.

#### **4.2.5 Satellite phones**

The era of the satellite phone is here. Iridium, Globalstar, ICO/Inmarsat, Thuraya, ACeS are all up and operating. Additionally, Inmarsat will begin a new service over North America soon in the form of both the BGAN (data and voice – small briefcase sized unit) service and iSat Phone (voice only – but not currently useful over the USA, and may not be useful over Alaska when deployed – consult your provider before purchasing). Several popular mountaineering equipment suppliers carry these phones for sale. I personally have rented them for professional reasons, and have much experience with Satellite communications systems in general. As of 2005, only two commonly available systems will work on Denali: Iridium and Globalstar (ICO will work as well, but is less common). In my professional opinion, neither will survive without major infusion of cash or customers beyond the end of this decade (2010). But before they re-enter the atmosphere, both are useful on Denali, and in 2005 we saw people using these systems with success. (see the story from 2008 cited below where a satellite phone saved a man's life reference paragraph 14). Additionally, Satellite phones are the only useful communications systems at Camp 3 at 11,200 ft on the West Buttress route and on many other parts of the mountain where point-to-point line of site communications are not possible (Walkie talkies, FSR, cell phones).

A 2008 update, Iridium is seeking and will probably get, additional funding for a next generation system, but the fund/design/ build process for a satellite constellation typically takes at least 5 – 10 years, so be careful of any expensive personal communications investment you make (Iridium phone "kits" may cost up to \$2,000 / each plus air time).

For how useful these satellite phones can be see the article included in paragraph 14.1

#### **4.2.6 Renting a Satellite Phone**

Purchasing a satellite phone can be expensive (\$600 - \$2000); then you must also purchase air time to actually make your phone work (usually an activation fee plus per minute charges of \$1 - \$3/minute), which means renting a phone may be the best choice for a climber. From personal professional experience, I can tell you renting a phone is a relatively easy thing to do, but be sure to not wait until the last minute to do so, as you'll need to time to do an investigation of which provider to use (Iridium, Globalstar, Inmarsat), who to rent from, and leave enough time for the delivery of your phone via mail order. While a quick web

search using the terms: ("satellite phone", rental) will yield many places to rent from, a few tips may help the first time renter

- Rent from a company in your home country. If in the USA, rent from a company in the USA
- Rent from a company that you can actually call and speak to, don't do the entire transaction over the web.
- Talk to someone at the company and be honest about what you will be doing with the phone. Ask their advice about which service to use – remember this is a very dynamic market place and this write up may be dated by the time you read it.
- Be sure you understand the terms of use for this phone, and exactly what you are paying for and what you are not: access, air time (two different things), period of rental, charges for days over, damage or loss liability, return policy, battery life and usage conditions (i.e. consider renting a second set of batteries).
- Personally, I'd rent from a company whose ONLY does communications systems. You'll be able to figure this out when you talk to a rep on the phone. Ask them this question: "if I was going to Mt. Everest, which *hand held* phone system would you recommend?" The answer in 2008 would be Thuraya. A knowledgeable provider will know this instantly. If they hem and haw about it, move on.

Final note on satellite phones. Currently, Thuraya does not work in N. America. There is a move to add more satellites to their constellation, but North American access to this system is some ways off. ACeS phones also do not work in N. America, but Inmarsat has now purchased the ACeS service and there may be plans to roll out a world-wide iSat phone in the next few years for N. America. For those that really want to stay in touch and surf the web at 14k while waiting out a storm, check out transporting a BGAN system up the mountain with you. BGAN will handle voice, streaming video, and normal internet protocol (IP) traffic such as web surfing for the national weather service web site for the latest radar / satellite image of an approaching monster storm.

*Be aware however that due to satellite orbital position and inclination of the beam patterns, just because a satellite phone works in the lower 48, doesn't mean it will work in the far northern latitudes of Alaska. Check with your provider before buying or renting.*

One of the few plugs I'll make in this piece is for a satellite phone renter I've used before and like: "Outfitter Satellite Phones." They have a main office in Nashville, TN, but also a pick up location in Anchorage AK. This is particularly handy as they won't charge you a delivery fee, and there isn't a question that you will get your phone, or that it will work once you're in Alaska. I've found their sales people to be quite knowledgeable and helpful. Contact info: [www.outfittersatellite.com](http://www.outfittersatellite.com); 800-881-7802. Visit them on the web to see what their rental policies are, then call a sales person who will help you select the right phone for your use and walk you through the rental procedures.



### **4.3 Emergency Locator Beacon**

A new device derived from Global Positioning Satellite (GPS) technology has arrived on the scene to assist wilderness travelers in the last few years. This is the Emergency Locator beacon. One push of a button on these devices, and an emergency response center receives your distress call and forwards the information to the nearest wilderness rescue agency. In 2008, a friend of mine used one of these devices in the Sierra Nevada mountains of California to have her friend Helicoptered out from a remote location when she snapped her ankle while climbing. The alternative would have been to send a runner to the nearest ranger station 1.5 days away, wait for a ranger to show up to make an assessment a day later, then wait another half day for the helicopter. These devices are evolving in sophistication, capability and quality all the time, so a tutorial isn't appropriate here, but before you buy one, you should know they require an annual fee in addition to the cell phone sized transmitter for \$150 or so. These are not transceivers, you can't receive a normal call or place a voice call, they are more akin to smoke signals sent up into a non-responsive ether, than the immediate communication we are all now used to. Before you buy one however, be sure your brand and service are usable in Alaska. If you are on a standard route on McKinley, I believe a ELB isn't needed expect for perhaps summit day when you'll not be in the company of scores of other climbers whom are within a few hundreds of meters of your location.

### **4.4 Stove:**

I believe this is another item you need to have redundancy on. For a whole host of reasons, I prefer white gas: performance at low temperature, availability of fuel, and maintenance of white gas stoves on the mountain (bring a repair kit). Most other climbers are using this type of stove and you'll be able to get other people on the mountain to help you if you need spare parts. Again, be sure to try yours out in winter conditions. Be sure you know how to light it and know if it has a tendency to flare up. In `89, there was a skeleton of a tent at 17k on the West Rib from a party that wasn't aware their stove had a tendency to flare – they also apparently forgot even wet tents can burn when they are exposed to flame! Light your stove in a Vestibule that's open to the air – another argument for a tall windshield.

#### **4.4.1 Problems with Gas Stoves**

In 2005 we encountered a problem with both the MSR XGK and Whisperlight stoves at low temperature. At 17.2k we saw temperatures at night that sunk as low as -25 deg F. Joe Burton and I left our stove outside the tent at night as did most of the other climbers at high camp. Steve and Scott put their stove in a plastic bag inside Scott's sleeping bag. In the morning, their stove worked, while 4 out of 5 other stoves in camp, including Joe's and mine. Our group was lucky; we were able to thaw out our frozen stove while others were forced to leave high camp to move down the hill toward warmer temps. Given the weather patterns over the next few days, I doubt they were able to get back to 17.2k and do the summit while they still had food or the inclination to do so.

In 1997, Steve Eckert and I used an old Optimus stove he's had for decades. This is the type with the fuel bottle directly connected to the burner, and a pump directly attached to the fuel bottle. I don't think they sell them anymore, but this sort of arrangement seems to work best in cold conditions because there is no fuel line to freeze up. The down side is one must continually re-fill the relatively small capacity fuel container.

Another obvious, but often overlooked problem with pressurized gas stoves is the need to keep the pump seal moist. Be sure to oil your stove before the trip, and carry a repair kit to fix it once you are on the mountain. Even at moderately low temperatures in the Sierras (California) I've noticed this is a problem. Warming the stove up inside your sleeping bag may help the problem, but you may also have to warm the fuel bottle up as well.

2008 Update. Apparently, MSR is NOT shipping their new stoves with the pump seal lubricated. A party of climbers on a winter attempt of Mt. Shasta in early 2008 found their new MSR stove would not pressurize, forcing an end to the trip. The owner called MSR to find out what could be the problem and was informed that MSR isn't lubing the seal, and now expects the purchaser to do so upon first use. Not a big deal I suppose if you know this little fact, but a trip killer if you don't.

#### **4.5 First Aid kit and Medical training:**

Don't skimp here.

Pain Medication – the real Rx stuff (i.e. narcotics) PLUS Aspirin & Ibuferon

Blister kit (this should be a personal item)

Band-aids and other wound dressings (think large deep wounds)

Tourniquet

Compress

Iodine to and irrigation syringe irrigate wounds

Medical tape (sticky)

Ace Bandage (for sprains)

“First Aid” Training! Get some, and go beyond the basics.

Know how to do the following: apply a tourniquet - what to do if someone runs an axe through their thigh; the stove blows up and blinds your partner; you pick up a hot pot with bare hands and burn yourself or spill boiling water on yourself; frostbite (know the signs and treatment!); snow blindness (that extra pair of glasses if the best prevention); hypothermia; broken leg / arm; concussion; heat stroke (no kidding lower on the mountain); altitude sickness (HAPE and HACE warning signs and treatment); dehydration; hypoxia; Carbon monoxide (CO) poisoning (from your stove in a poorly vented tent). Know how your body responds to fatigue, lack of food, what happens when you are hypoglycemic and haven't had enough water.

In 2005 our team was one of the better prepared in the first aid department: Joe and I had taken (and used) advanced courses in advanced First Aid techniques, and Steve a graduate of the Army special forces medic program. Our first aid kit

was a bit better than most to say the least. When the climbing ranger found this out at the intro briefing, he asked us what our call sign was in case they needed extra help in a rescue.

#### **4.6 A Discussion on Weight**

Climbing McKinley is a heavy affair. NO ONE but the truly fit and dedicated alpinists climb with a kit that weighs in at less than 80 lbs. The exceptions are those that are in good enough condition and acclimatized sufficiently to make the attempt in less than 10 days. Usually, these folks are those that have just come from a spring climb of one of the Himalayan giants, and are now “running” up Denali as a finish to their adventures. Most of these folks will have an acclimatization base of 18,000 ft and need not make the acclimatization stops everyone else does. But this means they have little or no margin to weather out a monster 3 – 4 day storm up high without giving up the summit attempt.

All three times, I've gone, my pack weighed in at 100 – 120 lbs (the first time we had more technical gear such as two ice axes, ice screws and safety line to secure the West rib route). So while saving weight is a good idea, don't go overboard if it means trading comfort and safety for a few ounces. This applies to books, and the radio, but also extra hats, gloves, and sunglasses as well. Remember, you'll need to haul enough calories to sustain you each day during a winter climb – this works out to be a minimum of about 2 lbs / day if you are consuming a typical backcountry diet. Given that you will be climbing a monster mountain in cold weather, you'll still lose weight on this diet, so bringing chocolate and nuts may help. Then there's the very idea that this is a WINTER climb – heavy sleeping bag, heavy tent, heavy boots, and lots of other stuff that you normally wouldn't have along on even a short winter climb in a more temperate range like the Sierra Nevada. If you budget at least 20 days for your climb, that's 40lbs of food alone, add in gas and all those extra clothes, and you quickly see how one gets to 100 lbs.+



**Figure 12: Scott Warner Starts out with way too much weight – 2005**

Photo Note: Scott later left much of the “excess food” he was carrying behind in a cache at 8,000 ft (the base of “ski hill”) where we picked it up on the decent.



**Figure 13: Scott Warner Practicing crevasse self-rescue on a training trip**

Photo Note: Our team practiced crevasse self-rescue, solo rescue and team rescue, ice axe arrests, crevasse navigation, sled pulling, and general cold weather camp craft before we hit the mountain. We had our crevasse gear and rescue skills pretty well wired and had preset the length of our prussic knots before we hit the mountain. We also carried small laminated cards with crevasse rescue techniques printed on them in our pockets.





**Figure 14 Mount Hunter from 8,000 ft Camp**



© Steve Shields 2008

**Figure 15: Skiing up the Lower Kahiltna in a Low Clouds and Fog**

We roped up ALL the time, especially when we couldn't see the crevasses! Note the climbers in the far distance obscured in the ground fog. It is common for this pea soup fog to envelop teams for long periods of time compelling them to depend upon staying in the well trodden track and navigating between wands.

#### 4.7 What I don't think is very useful:

**Table 3: Non-useful Items**

<p>69. Avalanche beacon. This place is huge. Any avalanche will wipe out the entire party, and many others. It's dead weight. Fortunately, the principal travel routes are in areas where avalanches are rare – but you'll hear and see plenty dumping off the cliff bands on either side of you. Be afraid; be VERY afraid. Don't go near them. Don't explore on your own.</p> <p>70. Avalanche probe poles. Avalanches on Denali contain MONSTER ice blocks the size of houses with vast volumes of snow. Who are you fooling? Stick to the routes where avalanches are a problem.</p>	<p>71. GPS unit for locating your caches. DO NOT depend on this to locate your caches! It is NOT accurate enough. If you can't see well enough to travel. A GPS will not locate crevasses! A well used foot "path"/trench and wands mark the climbing route, but this changes as the crevasse field changes.</p> <p>72. <b>On the other hand, a GPS may be useful to guide you back from the top in a white out and keep you from tumbling down the rescue gully, or helping you follow way points down ski hill after a carry. We used two of them in 2005 with some success.</b></p>	<p>73. A fleece jacket – others will argue on this point, I prefer a "monster" down jacket for the weight. Lower on the mountain you won't need a down jacket, up high it's too cold for a fleece. So why haul something that isn't warm enough.</p>
<p>74. Rigid crampons – hinged ones will do just fine for most of the routes.</p> <p>75. Ice screws. Used to be on this not-needed list. They aren't after our incident in 2005 when an ice screw proved very useful! One per person.</p>	<p>76. Fancy ice axes. Unless you are doing on of the sustained ice routes, or fooling around on some ice blocks at 14k, there is little opportunity to do steep ice on the "normal" routes</p>	<p>77. Helmet – unless you plan on doing one of the more vertical routes, this is dead weight.</p>
<p>78. Headlamp or any light source – you won't need it at this high latitude in late spring.</p>	<p>79.</p>	<p>80. Hydration systems with bags and long tubes may only be useful below 11k</p>



## **5 Clothing:**

The best advice I got in this area was back in `89 from Dave Nettle who ran the Alpine Glow Mountaineering shop in Tahoe City, CA. Dave had summited Denali and several other Alaskan peaks including Logan and he said: “don’t bring too much to wear.” This is very true. While Denali is a very large peak near the Artic Circle, the winds howl, and the snow piles up to amazing heights, it does all that while you are in your tent inside a sleeping very warm sleeping bag. With one exception – summit day. Almost by definition you will be summiting on a “good” weather day - If you aren’t, you may not make it back down. So while wearing bombproof Gortex Bibs and having a Down parka handy are essential, don’t think you’ll be standing around in a blizzard all the time. Having multi-purpose layers to take on and use as conditions vary is the key to keeping your kit as light as it can be. The one exception is having multiple hats and gloves. These should be both very warm, and have some sort of attachment system to keep them from being blown away.

### **5.1.1.1 Anecdote: Remembering your grade school mittens**

In `97, Steve Eckert and I saw a group of German’s who had returned to Talkeetna from their attempt just ahead of us. One, very suntanned climber was on the Bush Pilot’s office phone trying to call their friend in the Anchorage hospital. The guy making the call had horrible puffy blisters on his hands indicating a case of frostbite. Apparently, this group ended up digging a snow cave up high during a summit attempt when the weather turned bad. During the digging, their mittens blew away. Since they had no extras, and weren’t wearing liner gloves their hands were exposed to the elements both during the dig and for the rest of what could only have been a very cold night. While they survived, their hands didn’t. As the telephone call unfolded, it was apparent that their friend was going to loose at least some of his fingers. There was quite a bit of stoic crying going on after the phone was hung up by this otherwise tough looking climber. All for want of a few simple cords to keep their mittens from blowing away or having a back up pair of gloves in their summit pack someone lost their fingers and probably ended their climbing career.



© Timothy Hult 2008

**Figure 16: The Rescue Helicopter Evacuates a climber from 14,000 ft**

A cameraman doing a commercial shoot lost his mittens (and later all his fingers) while filming on the West Rib during the 2005 climbing season. He had to be evacuated on this helicopter. Steve Eckert and I saw a similar “rescue & recovery” operation in 1998 when two climbers fell down the chutes above this camp in a snow storm.

## 5.2 Clothing List

**Table 4: Clothing List**

<p>81. Down Jacket w/ down hood – make it a wind proof one that can be worn alone (new school) or under your G'tex parka (old school). Buy the warmest one you can afford. The latest rage is to use one of the monster parkas that you don't wear under a Gore-Tex parka, but is so monstrous its all you need. Be sure it has a wind barrier and no sewn through seams.</p>	<p>82. Down booties with anti-skid. You'll want to wear these around camp. Do they fit inside your over boots for trips to the john?</p>	<p>83. Boots: the warmest plastic double boots you can find. The new ice-climbing leather/plastic hybrids boots aren't warm enough! Don't be tempted. Your toes are worth more than a few \$.</p> <p>84. Overboots. You'll need these as well. I used some nice neoprene over-boots the last time and never got cold feet.</p>
<p>85. One pair of Exp Mittens – the warmest you can find. These should have removable liners so you can easily dry the liners and overmitts separately. Also put "keeper straps" on them. Size them large enough to put a pair of Light weight fleece gloves – not "liner" gloves - in them -</p>	<p>86. Exp Wt zip turtle neck 87. + 2 mid-wt turtle necks 88. + 3 Poly T-shirts 89. I sleep in a dry pair of Long underwear every night (warmer)</p>	<p>90. 3 heavy pairs of socks + 3 liners</p>
<p>91. One pair of Exp Gloves- these are back up for the mittens and useful down lower. Remember to put "keeper straps" on them.</p>	<p>92. Fleece vest – wind bloc is a nice thing to have. I loved mine worn under my G'tex parka while moving at higher altitudes.</p>	<p>93. Vapor barrier liners for feet. Use with caution. Treat your feet with anti-persperant if you use them. Practice with them!</p>
<p>94. Two pairs of liner gloves (thin). You will use these in the tent A LOT. They wear out easily, and weigh nothing. They will also keep your hands from drying out as quickly as they otherwise may in the highly desiccated air. The latest rage is thin</p>	<p>95. Exp Wt long johns – climb in these. 96. Lt wt long johns - I sleep in these.</p>	<p>97. Bomb Proof G'tex Jacket. Put zipper pulls on every zipper so they can be opened with heavy gloves. Does it have pockets for gear? Does it have attachment points for your gloves &amp; mittens? The new rage is to use</p>

<p>G'tex liners. I swear by these as they are much warmer (and more expensive) than the fabric only ones.</p>		<p>a lighter weight "soft shell" jacket as a wind block while climbing, then throw on a monster down parka when stopped. Be sure you have a hood on both however.</p>
<p>98. One mid-wt pair of windstopper gloves – you'll use these lower down on the glacier and as an emergency pair you can have in your pocket always. My Expedition Mitts are sized so they fit over these gloves.</p>	<p>99. Fleece pants – must be able to wear long underwear under them and G'tex bibs over them. I used a lightweight pair of these and they worked well.</p>	<p>100. Bomb Proof G'tex Bibs. Can you get out of these to go to the john? Do they have a pocket for some minimal essentials? Have you put zipper pulls on all the tabs for easy access with gloves on?</p>
<p>Hat system:  101. Sun hat: (visor, neck guard, covers ears)  102. Polydome fleece hat. For absolute warmth, put this under a balaclava.  103. Heavy wind stopper balaclava  104. A lightweight balaclava under all that then pull the down-filled hood of your down jacket on top of the whole thing. Be sure your goggles fit over the headwear you intend to wear in poor conditions.</p>	<p>105. Light wt balaclava. I like these things. You can wear them under your sun hat, to bed or under your bomber balaclava. They weigh nothing. (See also 92)</p>	<p>106. 2 –3 pair poly-pro underpants. Consider getting the kind with a "wind blocker" panel in them.</p>
<p>107. Down Pants. These don't weigh much, pack to nothing and are very warm over G'tex bibs / pants. Finding them for sale will be difficult, so be sure to start your search in the winter time and on-line for best selection.</p>	<p>108. Facemask windshield for up high.</p>	<p>109.</p>

You've no doubt noticed the heavy emphasis on some items like redundant hats, gloves and thermal underwear. Some things you simply cannot go without: Heavy covers for your hands, best quality sunglasses (2), and a warm, layered hat system flexible enough for all conditions from scorching sun to a driving

blizzard. Denali is unlike anyplace you've ever been before even for a guy like me that went to college in Northern. NY State where it got to -50F in the winter all the time. The big deal is to practice with this stuff on a Denali – like place: Say Rainer, Hood or Shasta in winter; or Mt. Washington, or Mt Marcy for those on the East Coast.

### **5.2.1 What I wore lower on the mountain.**

By definition, the day you arrive the weather will be decent. The lower part of the Kahiltna is at roughly 7 – 8 k feet. Not so terribly high. When the sun is out, this huge basin can really cook. Both times, I found being on this Glacier a surreal experience of fire and ice. I stripped down to light wt long johns with G'tex bibs (unzipped) and a mid weight thermal top with a full sun hat with "Lawrence of Arabia" head curtain, a nose guard and heavy sun cream. I was sweating. When you stop, the heavy G'tex climbing jacket goes on, but overall, you're warm, and you tent to fill your clothes with sweat.

That's why I favor having a fresh change of long underwear to wear to bed. No sense dragging all that moisture into your bag with you. So I change when I get ready to jump into my bag – which is usually right after I get into the tent.

Higher on the mountain, but not summit day, it gets colder, and one needs to add a layer. For me this was a heavier pair of long underwear on my legs and another mid-weight top or a fleece vest, plus wearing the Gore-Tex jacket all the time. My hat system changed too as now, I wore a billed fleece cap with an Light wt balaclava underneath. My Gore-Tex jacket has a monster hood that I can pull up when cold as well. Scott wore a lightweight Gore-tex thermal layer underneath an insulating layer most of the time and reports it worked well.

### **5.2.2 Down Jackets and Parkas**

Aside from your sleeping bag and tent, the next most expensive item you'll buy is a good quality down parka / jacket. On a high, cold mountain like Denali a Parka may also save your life if you get caught out in a storm, so choosing wisely is very important.

First things first: Let's define what the difference between a jacket and a parka is. My definition is a Jacket is a shorter than a Parka, with the bottom somewhere around your belt buckle or just above. This gives a jacket advantages to climbers on a budget in that they are both cheaper than a parka (usually because they contain less material and down), and may allow easier access to your harness. This can be a very good thing on a cold technical route where you have to access your harness a lot. Parkas are usually cut longer, have deeper pockets to store things in, and because they are longer and extend another 3 – 6 inches lower than a jacket they are warmer. A key feature of a quality Parka intended for use in sever conditions is the incorporation of a cinching cord at the waist to keep cold air from blowing up from below, and a down hood that may be used over a helmet.

There's been a sea change in what people wear on the mountain over the past few years. Conventional wisdom is now that waist length down parkas are out, and thigh length monster ones are in. In any case no one uses a "down sweater" as these are inadequate at any altitude above 11k. This is another item where you need to spend big bucks. The beauty of this is that one can wear thinner layers while climbing then put on this monster parka when stopped or around camp. Many times we saw people wearing a light weight 'soft shell' jacket over several thin insulating layers (eg. Lightweight long sleeved top, medium wt zip turtleneck, fleece wind stopper vest), then pull out a monster down parkas when stopped. Make sure this jacket has inside pockets for water bottles and deep pockets on the outside for your hands and other items (wind stopper fleece gloves, knife, energy bar, etc.). In my opinion, Marmot Mountain Works and Mountain Hardware make the best parkas of this type as of now 2008, but Feathered Friends, North Face, Patagonia and Western Mountaineering all have fine Parkas as well. Some clothing lines carry parkas and jackets with similar names, be sure you are getting what you want: e.g. Mountain Hardware sells a Sub Zero SL Hooded Jacket and a parka with a similar name for a similar price.

If you have a serviceable waist length (old school) down jacket, don't despair; this is what Steve Shields and I used in 2005 to good effect. But beware a jacket works best when coupled with a pair of high bibs on your lower body to keep you mid section warm. See the picture of me ready for summit day in this article (Figure 17). For this reason a long parka should have a zipper that partially opens from the bottom.

On the extreme end, at least two manufacturers are making a Parka for use in "extreme" conditions (Marmot names their The "8000 meter Parka"). These are at least 1/3 to 1/2 again as expensive as lighter weight versions. I don't think you'll need these for Denali, but they certainly won't let you down if you have to bivouac above 18000 ft. There are also down suits for sale as well that advertise they are for use in Antarctica, the Himalayas and Alaska. If all you are going to do is climb McKinley, then you don't need one of these, and I doubt they will be much good in Antarctica either unless you'll be there in winter or out in a blizzard. On McKinley, they don't have much utility down lower on the mountain and unless you hit a particularly poor summit day, you may be too warm in one the rest of the time as well.

Here is a list of the features I'd look for when shopping for a Parka or Jacket useful to mountaineers:

- 650 to 800 fill goose down (not feathers)
- Integrated hood, this may or may not be detachable. Sized large enough to fit over a helmet is nice, but if so, it should be adjustable to take up the excess material if not wearing a helmet.
- Sized roomy enough to fit over several layers of clothes. You may want to try yours on for size before committing to a purchase. Another reason to shop at a physical store rather than buy one on-line without knowing the sizing.
- Large zippered pockets for storing gloves and keeping your hands warm

- A wind proof / water resistant shell
- Seams are NOT sewn through
- Zipper baffle
- Inner pocket for a 1 liter water bottle
- Two way zipper (zips from the bottom as well as from the top)
- Elastic or Velcro cuffs
- Zippers pulls that can be equipped with strings to aid in their operation with gloves or mittens on.
- Draw string interior draft skirt at the waist on longer parkas
- Rings to attach mitten keepers (this is a rare feature seldom found on down parkas, but very nice to have to clip your mittens onto)

Last, this is one item, along with sleeping bags and tents, where you definitely pay for what you get, and if you think you are getting a deal, you probably aren't.

### **5.2.3 Down Pants**

Steve Eckert had a pair of these in 97 and loved them. I wore them on summit day in 2005 and loved them. Good ones weigh a pound. Not much weight in return for real warmth. I would size them to fit OVER everything else, as you'll only want to put them on when you really need them, and since you won't need them most of the time you'll most likely want their warmth in the middle of a climb. You certainly don't want to drop your Gore-tex bibs to put them on. I did use mine on summit day from the time we started out until our return 12 hours later.

Higher still, I wore an expedition wt thermal top over both a thermal T-shirt and zip Turtle neck, fleece pants under my Goretex bibs, and had the down jacket at the ready at all times. Gloves and mittens changed accordingly, but above 11k, you better have the warm stuff very handy. Be sure it doesn't blow away when you dig it out of your pack in a windstorm.





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**Figure 17 Tim's Summit Kit**

Note the use of purple neoprene "overboots," insulated ice axe, glove liners, gauntlet gloves, down mittens at the ready, balaclava and sun hat, sun screen on a rope, down pants over Gore-tex bibs, and Gore-Tex parka over insulating layers (Down parka is stowed in the pack).

#### **5.2.4 Boots and socks**

This is a hard one. First, go to a mountain shop with someone that knows how to fit boots and has an appreciation for climbing a big, cold mountain. Then buy your boots from them so they are there for the next person, or you, to buy boots from the next time. While I love saving money buying over the Internet, there are some things I'll never trust to that sales channel. Buying shoes and boots is one. Getting a boot that fits is one of the most important things you'll do.

For fit, wear a heavy pair of expedition weight socks with polypro liners to the shop and have them measure your foot. Remember, your foot will swell under the stress of altitude and heavy weight in the back pack, so the boot must be

sized bigger than a street shoe, but not so big that you are swimming in it. The new thermal fit boot liners are terrific things, but only if fitted correctly. Here again, go to a shop with an experienced person who knows how to properly fit these things - someone that knows the difference between fitting hiking boots and high altitude boots.

This is important as most shops are populated by rock jocks, not mountaineers. Failing your ability to find someone who really knows what they are doing, here's my fitting guide.

I also have a couple of pairs of boiled wool socks that are as expensive as they are warm. They don't have any padding on the bottoms, and no fancy material, just boiled, dense wool. They are the nicest things ever on a high mountain. On a big long climb, I have at least 2 pairs of these socks so I can wear a dry pair every day and put the wet pair either at the bottom of my sleeping bag or on the line at the top of the tent on a warm day. I always change my socks to a dry pair immediately upon getting into the tent at night. Fresh socks and down booties keep your feet happy and healthy.

I would get buy a high altitude boot *at least* ½ size to one full size larger than your foot measures (US sizing). Since your feet swell at altitude and you're going to wear thick socks, you'll need the space. I also load my boot with insoles to take up the space of my narrow, low volume foot. While you may not need to do this for volume purposes, it is still a good idea to figure on getting a good quality, insulating insole in the boot to prevent heat conducting through the crampons to the snow. Since walking performance isn't much of a factor in the traditional sense, having two foot beds or a very thick one makes sense.

A hint on fitting these kinds of boots: Take the manufacturer's foot bed out of the boot and put your foot on it. How much space is there between your toe and the end of the foot bed? Now put on a thick pair of socks - bring your own to the store to be sure to use the right ones - now how much space is there? Is there stillroom to wiggle your toes? Remember, you'll also be wearing THICK socks plus liner socks - maybe vapor barrier socks - do you still have enough room? The "walk around" test doesn't count with these boots; they don't get used this way. Nor does the idea of "feeling where your toes are" test. Again, a shop that knows what they are doing is your best bet.

What can happen if you get the wrong size? Scott had boots that "sort of worked" before we hit the mountain. On day two he developed a blister the size of a quarter on his heel. Steve (our EMT-qualified medic) patched him up with super glue, second skin and allot of tape. All because his boots were just a little bit too small.

Another story I heard this year from an Everest summitter who bought his high altitude boots *to his street shoe size* than discovered his feet swelled when at altitude. On summit day he got such a bad case of pinched foot he had to back

down the last few hundred meters toward high camp, and didn't regain feeling in his feet for several weeks.

#### **5.2.4.1 Some thoughts on Vapor Barrier Socks**

A product of growing up in the cold and changeable northeast is feet that have gotten frost nipped a few times. So, I get cold feet easily and for that reason and one other, I wear a vapor barrier sock over the liner sock then stuff the whole arrangement in the boot, it adds up to more than a size above my street shoe. Vapor barrier socks have fallen out of favor in the climbing community in the last few years and I know why. They are a pain to use and smelly too after a few days, but for my money, they do one very important thing on a long, cold climb; they help keep your boot liner dry. This is a huge deal on a mountain where you won't get much of a chance to dry your liners out, and warm dry liners may save your toes when you get up above 17000 feet. To combat sweaty feet, I use a bit of foot anti-perspirant and foot powder every morning. To be effective however the anti-perspirant needs to be applied for several days before the beginning of the climb. Once it starts acting, your feet will not sweat as much that they otherwise may.



**Figure 18: Going Down from 14,000 to pick up a Cache. Mt Foraker in background**



**Figure 19: Climbers moving up from Windy Corner at Dusk, Mt Hunter in background**

## **6 Food and Cooking**

Next to your choices for shelter and a sleeping bag, food is the most important thing to consider on this climb. Calorie content, ease of preparation, taste, use of gas, and variety all play into your selection. Here are a few things I've learned about food.

Put your food for each day in a separate bag. Then all you have to do is grab a single sack during a snowstorm. No routing through your drag bag to find first drinks, then dinner, then lunch etc. It also allows you to package meals by calorie and variety content. This will keep your interest in eating up, something that surprisingly can wane at altitude. Keep one or two bags with nothing but drinks in it however.

Eating all freeze-dried is expensive and may not give you the most calories. Try using Couscous, instant rice, Knorr soup, instant mashed potatoes, etc for variety. Carbs is what you need in the cold and exertion of this climb. Leave the low cal stuff at home. If you do the math on fat and carbohydrate content of the typical backpacking fare, you'll find that the minimum weight in food per day is around 2 lbs. Either way, try to avoid simmering- type foods that really use up allot of gas. Not only do they take gas (weight), and takes too long in the cold weather but the opportunities for spilling hot stuff all over your down sleeping bag are multiplied the longer you have a pot on the stove.

The importance of tops to secure both your food bowl and your cup is important. The top on your insulated cup is obvious. Keeping a drink warm for a long period of time in 10-degree weather is important, but limiting the spillage when you inevitably dump the cup over by accident is huge – you'll NEVER be able to dry your sleeping bag. I also use a screw top bowl as this allows me to add boiling water to my freeze dried meal tighten down the top stick it someplace insulated, and magically, in 15 minutes dinner is served. No mess.

All three times, I've left food at the Kahiltna base landing strip (7.2k) in case we arrived there after the trip with no food left and a snowstorm prevented the planes from flying in from Talkeetna. This is something that has happened to several friends and in `89 I had to spend one night at Kahiltna base before a plane could pick me up. Bury your extra food, tents and whatever else you leave in water-proof plastic bags as the melting snow will soak everything not otherwise protected. Last, mark the site well with tall wands as the snow will melt out considerably while you are higher on the mountain. Measure where it is from a stable landmark (the air controllers tent for instance) then write this position down in your diary so you won't forget it. GPS measurements are good to only about a 10 m radius, which may not be good enough to keep you from digging a very large hole. (this is a commercial accuracy common to the GPS system, you may be able to achieve something better. Reference paragraph 7)



**Figure 20 Joe Burton Prepares a Meal at 11,000 ft**



**Figure 21: Day One – Getting Ready to Pulling The Full Load Out of 7,000 ft**

Note: use of H<sub>2</sub>O proof “drag bags” mounted in the sleds, the key is to keep the weight low and balanced from side to side on the sled to prevent tipping – see below





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**Figure 22: Typical unbalanced sled position**

No doubt, this climber, 1 hour out of Khiltna base, is now learning the importance of keeping the center of Gravity of his load low. You'll also note his is traveling alone and unroped.



## 6.1 Cooking Equipment List

**Table 5: Cooking Equipment List**

<p>110. Stove – get the hottest you can. I’ve also taken a back up stove and leave this in a cache higher on the mountain. To not have water is to die.</p>	<p>111. Pots: 1 large one for melting snow, 1 smaller for boiling water. Covers for each. My melting pot has a “bail” on the top. I find this useful.</p>	<p>112. Pot tongs. Do these fit the pots you are going to use?</p>
<p>113. A “dipper cup” keeps everyone’s germs out of the main pot and limits spills. Make sure this has a handle on it. Mine is an old measuring cup</p>	<p>114. 5 Gal bucket with plastic trash bag liner for use as a toilet (for larger parties).</p>	<p>115. Fire starter paste (for gas stoves). This is a real help on those COLD mornings.</p>
<p>116. Insulated stove stand. Use an insulated pad to keep it from melting into the snow. Cover the pad with heavy-duty foil or sheet aluminum.</p>	<p>117. Stove repair kit. Do you know how to use it? Did you clean your stove before the trip? Do it!</p>	<p>118. Screw top bowl (personal). I use a screw top as it helps re-hydrate freeze dried food easier, keeps spills to a minimum, and helps retain heat in the food</p>
<p>119. 2 sets of utensils – plastic. Put one in a separate place say your toilet kit.</p>	<p>120. Wind Screen. This should be tall enough to reach near the top of your largest pot. It will speed boiling, reduce wind blow out, and reduce gas consumption. You may make one out of heavy duty “oven tray liners” available in the supermarket.</p>	<p>121. Food to stay at base camp -where the plane lands. 2-3 days worth is good enough here, which should get you through any weather emergency that, keeps the planes from landing.</p>
<p>122. Small scrubber sponge</p>	<p>123. Insulated cup with a lid and a handle</p>	<p>124. 3 –4 days of food beyond what you think it will take to climb the mountain</p>
<p>125. Large capacity fuel bottles (1.5l). To decant 1 gal containers into. The store-bought gallon</p>	<p>126. Buy enough fuel to supply 2 climbers with 1.5l of fuel every 4 nights. Then buy extra. You buy liquid</p>	<p>127. Learn how to decant fuel, clean and rebuild your stove in bad weather, cook, serve, and eat lying</p>

containers are wimpy and bulky. They don't take much to puncture them.	fuel on the mountain. Check on canister restrictions with your Pilot	on your side. Try out the meals you plan on eating before hauling them on the mountain.
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### 6.1.1 A Discussion About Super Efficient Cooking Systems

The last few years have seen the introduction of several super efficient cooking systems such as "jet boil." While I don't own one yet, several friends have them and swear by them for their simplicity and conservation of fuel on weekend and longer trips into the Sierras. With built in wind screens and a combined radiant/conduction heating system, they would seem to be the perfect choice for use on McKinley, but for a couple of problems: 1) the pots are generally too small to melt any appreciable amount of snow for drinking water; 2) transporting the canisters onto the mountain may be prohibited by the bush pilots. Flight transportation rules and availability of larger pots may change these considerations, but if you have a system that supports only one particular type of fuel canister, don't expect to find many of those available from other teams if you run out.

### 6.1.2 Clean-up Tips:

Eating in stages leaves your bowl clean. The objective at any meal where you have to melt water is to use as little boiled water possible. I usually fix a bowl of soup first as re-hydrating with a quart of warm liquid is important. Then I fix my freeze-dried food in my screw top bowl by mixing boiling water into the bowl, screwing it shut and sticking it in my sleeping bag for 10 – 15 minutes. Last I fix a bowl of tea using the hot water and tea bag to "scrub" out the left over food particles and drink them down. Not very elegant, but it sure leaves my bowl clean, limits the amount of warm water used and isn't half bad.

### 6.1.3 Wind screens and the Science of Boiling Water

For you science minded people you know that simply melting water takes a certain amount of energy, but actually raising the same volume of water to the boiling point takes 3 – 4 times as much. This translates to using a large amount of gas each time you BOIL water. Be careful with what you boil and how much. This also makes a fine argument to bring along a tall windscreen that runs up the entire height of your pot. A tall windscreen channels hot gases up along the sides of the pot enhancing the total heat transferred between the flame and the pot. In '97, Steve and I ran some experiments on fixed volumes of water, the size of the pan and boiling times. Turns out that small covered pans with wide bottoms filled with moderate amounts of water boil the most efficiently. So if you want to save gas, and you do, the best practice is to boil only the water that you need for the immediate task at hand then boil again. Melting snow is a different deal however. I favor a large pot that allows one to gather a large amount of snow all at once, also allowing the water at the bottom to "wet" the snow on top which in turn hastens the melting process of the full pan. I believe the reason it does this is because the "wetter" the snow, the greater the conduction between

snow molecules (limited air between snow crystals) and the greater the contact between the snow and the pan. The final trick is to NOT heat your melt water too much, except for those bottles that may be exposed to the full weather when traveling. Generally, water heated to a tepid temperature is your goal, not boiling. On summit day you may want to change this around a bit and make the water hotter, slip it in your insulated bottle carrier, then shove that into your pack and next to your back.

## **6.2 Menus and Food**

Food may not be as important as your sleeping bag or boots, but it is VERY important; it is energy, entertainment, small pleasures and dead weight all rolled into a 24, single-day rations.

In my three times on the mountain, I've been in a shared commissary ('89) only once and used individual rations the other two times: ('97 & 2005). I prefer individual rations for the flexibility and choice of eating what I want when I want. This works well with small parties and really weighs no more. Since all our food required only hot / boiling water, sharing the stove wasn't a big deal, and the flexibility of deciding your own menu was a bonus. Besides, we could trade off some of our food if we chose, and this added to the variety. In larger parties of 4 or more this wouldn't work however as there are definite efficiencies to be gained with packing larger amounts, but this also argues that you'll all be gathered together for meals. Larger parties without a large Pyramid – style tent shouldn't count on getting together for these “family meals” all the time either, as storms will prevent any more than say 4 people gathering in one 3-man dome tent at any time. The people left out will be forced to cook on their own.

### **6.2.1 Food considerations:**

- Food is fuel. Fuel gets you up the mountain, keeps you warm and adds to your enjoyment of the experience. Do you know how many calories your body needs for a day of heavy exercise at altitude when it's cold: 2400, 3000, and 4000? My best guess for my self is 3500+. So I plan on taking about that with me on McKinley. While I'm willing to go into some caloric deficit, I'm not willing to plan on it for the entire trip. Some enforced rest days will even out your caloric needs a little, but don't count on it. If your accumulated caloric deficit is too large during the earlier parts of the trip, you'll “crash” on summit day and not make it to the top. Look at the packages of food, how many calories do they have? Then ask yourself when will you be eating them: rest days, light work days, heavy days? Also consider that eating all your calories at the end of the day at dinner won't do you as much good as eating them throughout the day. As a reference to back up my assertion of the necessity of eating 3000+ calories / day when exerting heavily is this advisement issued with the US military's (Meals Ready to Eat) consisting of 2 – 3 packages of dehydrated food. These meals are generally pretty tasty, and each component contributes 150 – 300 calories for a total of ~600 to 900 total calories per MRE ration pack. The packaging recommends consuming at least 3 - 4 MRE packs a day for a male (that's 2800 – 3000 calories) and 2000 to 3000 calories for a female. In 2008, Backpacking

magazine did a feature on caloric intake as well and they too recommend at least 3000 calories a day, but if you are exercising heavily for days at a time, and don't want to lose energy, weight or both then 4000 on "heavy days" is probably the right amount.

- It's very hard to plan on taking anything less than 2 lbs of food per day and meet your minimum daily calorie intake requirements. This means that food for 24 days will constitute at least  $\frac{1}{2}$  the weight you carry (simple math  $2 \times 24 = 48$  lbs: see paragraph 4.6 A Discussion on Weight. I can hear it now, "But I've done the John Muir Trail on 1 – 1.5 lbs of food /day, and it wasn't so bad," or "I need to loose some weight." A high arctic environment is not the place to put your body on an energy-restricted diet. You need to stay warm, you want to reach the summit, and restricting your energy intake is like putting regular gasoline in a Formula 1 car before a big race – not a solid plan to win.

- Variety. Think carefully about your food choices, even your favorite dehydrated entrée will be boring after the 6<sup>th</sup> time in 7 days. Down low I made my own dried foods. These are heavier, but tastier. I can also give myself some variety and they cost less.

- Avoid anything too spicy. For me, spicy foods loose their appeal up high. Stick with something that is milder, yet tasty and not too boring. This is where I use freeze-dried foods the most.
- Package your food into single day rations. Label the bags as to what is in them. This system will save you valuable time during a snowstorm or when you have to do a carry and place a cache. I do this sort of packaging for Lunches and dinners only, preferring to put breakfasts and drinks in separate bags (3 –4 days each).
- Consider labeling your food into "light" and "heavy" days with the heavy days being calorie intensive consisting of easily digestible carbohydrate intensive foods. The lunches on these days should be consumable on the go and contain foods to be eaten during short breaks. In the 2005 expedition we found the small packages of energy jells to be useful. Be aware however that these are quite heavy and carrying too many of them really pumps up the weight of your pack.
- I use a food dryer to make some of my meals. Experiment with this, but I've been very successful in making dried fruit (weighs less than the store-bought kind), dried tomato sauce for pasta, drying those re-heat in the bag meals. Careful though, I freeze all this food in heavy duty, "freezer" bags, and only take it out of the freezer just before I leave on the trip to cut down the possibility of spoilage.
- I also re-package all my freeze-dried food into Quart freezer bags. This eliminates a huge amount of packaging and waste that I have to deal with on the mountain. Repackaging also eliminates the bag inflation problem of hermetically sealed bags of freeze dried food packaged at sea level expanding at high altitude to 2x normal. Putting food in a double zip lock allows you to "burp" these bags down to normal size. This can be a big deal if you find yourself running out of space even if you eaten  $\frac{1}{2}$  your food.
- Sample all the freeze-dried food you plan to take on the mountain before you buy and pack 5 different types of food you don't like.

### 6.2.2 Some food suggestions:

- Dried lean ground meat, or make your own jerky. Make this just before you leave as the homemade stuff definitely has a limited shelf life.
- Dried tomato sauce, mushrooms, even tomatoes – makes a great pasta-based dish: I use angle hair pasta or the already cooked cheese-filled tortellini.
- Home made dried Fruit: apples, pears, apricots seem to work the best
- Nuts mix with raisins
- A few rolls or other bread products. You'll crave these. Pick them up in Anchorage on your way in. Pita bread will last a long time as well but may be hard to find in Anchorage.
- Large Bars of Chocolate: a treat for every day with lots of calories to boot. I get the really big ones wrapped in cellophane at my local "Trader Joes" market.
- Instant soups – little cooking, repackage the ones that come in the Styrofoam cups
- Instant mashed potatoes with dried butter sprinkles. These may be combined with dried vegetables and some dried meat for a quick meal.
- Oatmeal, or other dried cereals for the morning. I pre-mix mine with brown sugar, raisins and dried milk.
- Fig Newtons: these are high in calories, and relatively crush proof.
- Hot chocolate, tea, and cider. I like the idea of using one tea bag for a vast quantity of water, saves on tea bags, and makes the water more interesting to drink. I also bring along a pouch or two of "Milkman" brand instant milk, and some sugar cubes for my herb tea.
- I don't bring much flavoring for water. When you have 24 days to worry about that's a lot of weight in flavoring, but it's your choice.
- Energy bars. When energy bars first came out I was a big user of Power Bars, but I soon found these froze solid in cold weather. So I switched to some of the other brands. For McKinley however, I'd avoid the Protein only ones as the reason you're eating them is to gain energy, not stick to your Atkins' diet.
- Tubes of Jelly and Peanut butter. Yes, they are concentrated energy, but watch the freezing factor – remember you have to get the stuff through small holes in those tubes. Avoid the chunky types of both.
- Nutella. This decadent chocolate spread has 200 cal / Tbls. This can be loaded into squeeze tubes, and is certainly better than drinking vegetable oil for calories.
- "GU" energy tubes. New on the 2005 expedition, we used these successfully on the "hard" days. They seem to be just the thing you need every couple of hours on a tough carry to keep the energy balance up. Don't bring too many of them however. They are

heavy – and the real reason Scott's pack weighed so much to start with.

- Cous Cous mixed with Instant soup.

#### 6.2.2.1 Anecdote: “Kudo” Bars to the Max

Of course you could avoid all this messy cooking stuff by doing what a climbing pair we met on the mountain in `89 did. Their diet consisted almost exclusively of energy and candy bars, plus some hot drinks. They claimed that they were living on something like 10 Kudo candy bars each per day (~2500 calories), plus drinks. I'd get bored, not to mention what it would do to my GI track, and skin complexion. No word on if they made the summit. I would suggest a diet a bit more balanced.

## 7 Navigation

McKinley is a big mountain. It dwarfs all the others around it. It's a spectacular place waiting to be photographed (bring a camera with low speed film or digital ISO setting of ASA 50 or 100 or lower). In many ways you just can't get lost on the lower mountain. The route is obvious by the trench in the snow, but since it snows all the time, the trench will often be filled in. That's way parties bring a bunch of bamboo "wands" to mark the trail through the crevasse fields and to mark their caches.

When the weather blows in its amazing how one can barely make out the shape of these wands with surveyors tape on the top from even 10 yards away. Use these wands to mark the location of your cache as well. But don't depend upon a GPS location alone to do the job as you may have to dig a hole 10M in radius (the error circle for civilian GPS usage) to find your gear! Tip: If you are placing a cache for a long period of time, be sure to make the poles high enough to withstand a snow dumping of some 4 –5 feet.

### 7.1 GPS use on McKinley

In 2005 with the advent of cheap GPS receivers, Joe and I each brought one and used it to "mark" out route on ski hill and on the way to "windy corner." While we never used the waypoints, we easily could have in a storm and they could have kept us from getting hopelessly lost while on a carry or the return. GPS receivers have their limitations however. Even with the Selective Availability (SA) or dithering recently turned off, most commercial (i.e. civilian) GPS receivers promise and accuracy of only 10 meters (~30 feet). While many times one can do better than this, especially if you're operating in an area with a differential GPS broadcast, don't count on it from one time to the next for precision location of features or buried caches. This is particularly when one is close to a major ridge that may obscure your view of  $\frac{1}{4}$  of the sky and therefore all the satellites in that quadrant. While 10m doesn't sound like allot, when you return to the same spot your, accuracy will again be only 10m for a cumulative potential error of 20m (60 feet!). Imagine digging a hole 60 feet in diameter to try to locate the cache with your food and fuel in it! Just the same, they are generally accurate enough to *help* you locate major features that you either must or must not hit on the route.

#### 7.1.1.1 Anecdote: Humans as Blankets

Up higher on the mountain, the weather and winds are worse and the trail is NOT marked. Climbers returning from summit day in the teeth of blinding snowstorm have been the cause of many deaths on McKinley. In 1997, a typically large storm blew up and pinned us down for nearly three days after we had reached Genet Basin at 14,000 feet. The storm was a real terror to those higher on the mountain, but for us in the relative shelter of the basin, we just had a tremendous amount of snow. So much snow that it piled up to our waists and just getting to the pre-dug poo-pit was a journey that required full gear. Every year, Genet basin fills with tents during the climbing season and at any one time will have some 100+ people in residence. Yet during a storm of this magnitude, no one ventures outside his or her miniature fortresses for the duration of the storm. It

was during the beginning of this dump that a couple of British Marines (these are commandos as tough as they come) was coming off a summit attempt (I'm unsure if they summated or not), became disorientated, and stumbled off the West Buttress route. In their confusion, they fell off the ridge and proceeded to tumble and slide some 2000 feet into Genet basin. Their final resting place wasn't far from the little village of tents, but of course no one saw or heard them; no one until a climber stepped out to take a leak and noticed a figure in the distance. Putting on his jacket, he forced his way over to investigate and found one of the hapless Marines stumbling toward him. Apparently, his partner's body had cushioned his fall during the tumble, and his survival in the cold was due in part to the shelter his lifeless partner's form gave him during the storm. When it finally did clear two days later, a helicopter was called to blow snow off the hillside where the body was believed to be and to evacuate the injured climber.

## 7.2 Several Navigation Tips:

- 1) Bring a map; take bearing with your compass and altimeter while you are climbing. Don't miss the ridge. Beware of the magnetic declination this close to the magnetic N. Pole and what it can do to your "normal" sense of direction that relies on the rising /setting sun.
- 2) Use a GPS on this final day to take weigh points at critical points along the summit route. Beware that GPS accuracy is only 10m or so on *both sides* of your measurement making your "circle of confusion 20m+.
- 3) Use and follow the wands. Bring some of your own for use at critical junctures if none exist already.
- 4) Get an early start when the weather is good.
- 5) If the weather appears to be turning bad, it is! Turn back. Your view from the high ridges of McKinley is incredible, you'll be able to see weather coming for 100 miles. No, it won't miss you – McKinley gets ALL storms within a 100 radius. Not only does McKinley make it's own weather; it makes bad weather worse.





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**Figure 23: Freezing Fog on the Lower Kahiltna Glacier**

–Photo credit Steve Shields



**Figure 24: Moving Up The West Buttress in Foggy Weather (15k – 16,000 ft)**

There are two set of fixed lines leading up the West Buttress headwall, one going up, the other going down. As this picture illustrates, both sets can have traffic jams on them when the weather breaks. Both in `97 and 2005, I noted the presence of “tourist” climbers at the top of these lines, whose clear ineptitude slowed the entire process down for everyone else. It was clear they had no idea what to do with ascenders, were very uncomfortable on a steep icy slope and very generally terrified of the long, steep run out below. By the way, there is a que to get onto the fixed line here every year in good weather days.

## 8 Hygiene

### 8.1 Hygiene Items and Considerations

**Table 6: Hygiene List**

128. Toothpaste and toothbrush, dental floss, tooth repair kit (dental epoxy). Ask you dentist if anything looks like it will fall out or crack.	129. Toilet paper (2, ½ rolls wrapped separately) packaged with a lighter for burning. Get the “dense” TP, not the pillowed kind. Number of usable sheets, not comfort is your goal here.
130. A designated shovel for shoveling poo into plastic bags – don’t use this for gathering snow for melting into H2O!! (See equipment list above)	131. Enough plastic garbage bags (tall “kitchen size” to double bag 3 – 4 loads of poo. Yep, you’ll be hauling it around with you. Don’t forget the twist ties too.
132. Women: a pee-aid (I’m not sure what to call this, but it helps women to pee standing up). They are body-shaped funneled contraptions with a tube at the end. I’ve known several women who swear by them. Remember ladies; you are wearing several layers of clothing that needs to be removed each time.	133. 5 Gal bucket. Some large parties line this with plastic bags to go poo in using the rim as a seat. I’ve also seen toilet seats incorporated on these contraptions. Not for small parities however, and I’ve never used them.
134. Battery powered Shaver? I used one in 2005 and liked not having the sun cream glop up on a beard.	135. Handy-wipes for use as a washcloth
136. Foot powder and foot antiperspirant (see also vapor barrier socks above).	137. “Baby” wipes sealed in zip lock bags, not just the pouch they came in – it leaks!
138. Small bar of soap (hotel sized). We were able to heat water a number of times to wash with on warmish days. Steve Shields even took at sponge bath at 11k behind a snow wall.	139. Anti fungal cream. All this sweating in your boots may cause you a problem if you are susceptible to it. Come prepared.
140. Hand Cream. My hands crack in cold, dry weather. This can be painful and serious. I’ve used a small tube of hand cream at night, and then put my hands in liner gloves to retard the chapping. Make sure the cream has one or more of the following ingredients: Urea, lanolin, Steric Acid. Nothing else works. Eucerin is a good product and is available in a tube.	141. Prescription Meds: You know what you may need and how much to take. Make sure it is current, and change out the bottles to save on packing volume. Do not count on the medical camp to have what you forgot. They won’t.

A simple observation, most dysentery is brought on by poor personal hygiene habits. Practically, this means washing your hands before you eat. It also means that eating with your gloves on that may have been who knows where, is also a bad idea. I use the packages of “baby wipes” to clean my hands before dinner. You may also consider using a bottle of hand sanitizer, but be careful as it may freeze. In 2005, each of our two rope teams carried a small bottle of hand sanitizer and made sure we used it each time after “using the facilities” and before handling food. We had no Gastro – Intestinal (GI) track problems.

Just how big a problem are GI problems? This excerpt from an on-line article by Seth Rosen from June 16, 2005 illustrates the problem: “Of 132 climbers interviewed on the 20,320-foot (6,200-meter) peak in the summer of 2002, more than a quarter reported having trouble with diarrhea, said the report, which was conducted by officials with the Alaska Division of Public Health.” “At high altitudes and in cold temperatures, the authors said those troubles can be severe and potentially dangerous, leading to acute mountain sickness, hypothermia and fatigue-related accidents.” (cite: “Sanitation problems plague Mountaineers”)

Trim your toenails before getting on the hill. This will eliminate the hazards and pain of losing them if your boots don’t fit quite right over the next 3 weeks. You may also want to do your fingernails at the same time, but leave some nail on your forefinger to get your knife blade out.

Don’t try to save weight by cutting your toothbrush down to ½ size. Honestly, 1/4 oz will not make a difference in a 100lb load, and the extra leverage will be missed.

## **8.2 General Hygiene and Toilet Practices:**

I use baby wipes on the hill to keep clean. These antiseptic soaked wipes are made of paper and can be burned along with your toilet paper after they are properly dried out – which doesn’t take long. Caution however, since they are soaked in a water solution, they can freeze and they can leak. To get around this problem, I pack the handy reseal able packages in their own zip lock bags. This keeps the leakage in the bags and not soaking the toilet paper I keep in a larger zip lock bag. It also allows me to shove the whole mess into my jacket to warm it up.

I also take two, ½ rolls of toilet paper to a big mountain and I keep them in separate, waterproof bags – again redundancy on a critical item! You should consider your rate of TP usage carefully and bring as much as you think you need. While I appreciate the soft “pillow top” TP at home, I use the “industrial” no comfort, dense stuff while on the trail as it has more sheets per volume – a very important consideration.

Hemorrhoidal cream. The medical camp personnel at 14k confirm that at high altitude and an “odd” diet of dried starchy foods can conspire to make having some of this stuff a very good idea. If you’ve used it before, you’ll probably use it

here. We met one unfortunate fellow in 2005 that had an infected anus from all the pushing. His was an “emergency” self-evacuation from the mountain after a rather painful minor rectal operation.



**Figure 25: Joe Burton Disposing the of the “Poo Bag” in a BIG Crevasse at 11,000 ft**

### **8.3 Human Waste Disposal**

In 1989 – 2005, the Park service maintained at least two communal pit toilets dug in the snow: one at the landing strip, the other at 14k. While climbers generally are polite about it, and snow walls have been erected around these areas, do not expect privacy and certainly not “women’s only” toilets. Everyone uses the same ones.

Elsewhere on the mountain human waste may be disposed of via plastic bags deposited in crevasses (see above photo), except for waste generated above 14k, which gets treated in a special manner. The park service now requires all expeditions to use a sealed poo bucket to take waste generated above 14k down off the mountain to be weighed and disposed of at the park service headquarters in Talkeetna. Yes, this is no \$hit true. You and your team members will not only have to haul your \$hit up the mountain, but you’ll have to haul it down as well, put it on the plane and take it to the headquarters building where a park service

employee will weigh the container ensuring it was used as prescribed by law. I have no idea what happens if you don't return a container that is heavy enough, or don't return it at all. Perhaps a warrant is issued for your arrest and Federal Marshals show up at your place of work where they put you in cuffs and you are filmed by the local news crew doing the "Perp walk" while a voice over intones: "Mr. Hult was arrested today for soiling a National Treasure with his excrement."

The poo bucket is a special container similar to wide mouth bear canister, but with a leak proof screw top. The park service thoughtfully supplies these canisters with a white foam sealing system that all climbers affectionately call an "ass gasket." The photo below shows one of these buckets and gaskets on the ground next to our stash of gear outside the snow hole at 17.2k feet.



**Figure 26: The High Altitude Poo Bucket and Other Gear at 17k**

#### **8.4 To shave or not to shave:**

In '89, my male partner Kevin and I did not shave (neither did Kevin's wife Laurel!). But we both started the trip with a big beard. Don't go onto the mountain with the expectation that you'll grow a beard over the 3 weeks sufficient to provide sunscreen. You can't grow one fast enough. So either show up with a pretty healthy one that shields your face from the sun, or plan to shave.

Shaving has its advantages. Putting sunscreen on all parts of your face is a sure way to keep from getting sunburn, while beards can offer spotty coverage.



Problem is, you have to shave. Steve shaved in '97 and used one of those small, battery-powered shavers. He faithfully took the batteries out and warmed them before shaving, and reversed them for storage – so the shaver wouldn't turn on accidentally. While I don't recall that he shaved every day, every other day would be a good guess. This allowed him to put a nice coat of sunscreen on every day and avoid any kind of sunburn.

- Does your gore-tex over pants/bibs have a provision to stay clipped in while taking a dump, or for women to pee? Are they easy to get out of in the same kind of emergency? Have you "tested" them before hand?

#### **8.4.1.1 Antidote: What kind of Harness do you want?**

In the early 80's a group from a Washington State group set out to climb Mt Everest. Among the group was a talented woman climber (name withheld). An Unconfirmed Rumor has it that she died because her harness didn't have a provision to undo just the leg loops while the waist portion was still fastened. Thus, when she wanted to "go" she had to step out of her harness. Apparently, she was on a steep pitch and somehow lost her balance while lowering her drawers. The result was the harness was still clipped in as she slid off the mountain. Don't make the same mistake. Buy the right harness; know how to remain clipped in while lowering your drawers. Big mountains aren't a place for the modest.



**Figure 27 Taking a sponge “bath” at 11,000 ft**



## 9 Skills You'll Need

Sprinkled throughout this treatise have been several suggestions on things you need to know. I've collected them here in discussion format to highlight them.

- First Aid skills: broken limb, HAPE / HACE symptoms and treatment, burns, sprains, puncture wounds, cuts, sunburn, snow blindness, Hypothermia, dehydration, trench foot.
- Crevasse rescue. Practice this on a bridge if you don't have a handy crevasse! Do it with all the gear you're likely to have on.
- Ascending and Descending (!) a fixed line. Think about this. It isn't easy as it sounds, especially the going down part. Personally, I liked backing off the West Buttress and using two ascenders. Steve successfully used a lightweight "rope man" and worked very well, but make sure you know how to release the rope when you want to feed the rope "backward" while going downhill – give this a little thought to get the correct picture.
- Cramponing up steep slopes, and among mixed terrain (with rocks)
- Skiing and or snowshoeing skills
- Ice axe arrest – goes without saying, but I met a Japanese woman at 14k that had zero idea what to do with her axe and was a danger to everyone around her.
- Navigation and direction finding
- How to dig a snow hole and put up your tent in a howling blizzard. I took with me a small rope with the dimension of a proper hole big enough for the tent knotted into it. This saved a lot of arguing. Do you know how to make snow blocks to pile up as walls?
- Cooking /eating / cleaning up while lying on your side.
- Sleeping during a howling blizzard – physiological skills

### 9.1.1.1 Anecdotes on Crevasse Rescue and Safety:

In 1989, we had the privilege of sharing the Mountain with Mugs Stump – aka "Mr. Alaska" renowned for his ascents of Alaskan peaks. I remember meeting him as the 11k camp and exchanging pleasantries. If memory serves, he was guiding a client on a scientific trip to gather information on the geology of the mountain. The rest of the details are fuzzy, but what we do know is Mugs fell into a crevasse. If memory serves, he dropped into one of these Alaskan monsters and his partner couldn't get him out before he contracted hypothermia and died. If it can happen to "Mr. Alaska," it can happen to you. Train to pull your partner out of a hole, know what to do if you're in one, and know how to spot a "hidden" crevasse from above.

In 2005 an entire guided party dropped into a shallow crevasse when they stopped for lunch and grouped together just beyond Windy Corner. Fortunately, another guided group saw it happen and had the manpower to pull them all out safely.

Another story serves to further amplify this important point. In 2005 our group used skis as transport on the lower mountain. Only two places on the entire mountain did we not rope up: the West buttress ridge, and the upper mountain

above Denali Pass at 18,000 ft. Ski hill” – that portion of the standard route lying between 8000 and 11000 ft - was in pretty good skiing shape, with no crevasses evident at all in late May, making it a very tempting ski run. Our group always roped up when we skied, climbed, or went outside the bounds of our probed camp. Yet, on this particular hill we saw many parties snow shoeing and skiing without a rope, and marching nose to tail up the glacier. When we asked them “what about the crevasse danger,” the standard answer was: “We don’t see any crevasses.” I believe this is foolish. Some of these parties were hiking so closely together that the entire team of four would be swallowed up in one gulp into a yawning crevasse just waiting for the right amount of weight to be applied. To this day, there is another lone skier buried in the bowls of a crevasse at about the 10,000 level on “ski hill.” I wonder if he thought it couldn’t happen to him?

## **10 Packing for the Airlines and other Air Travel Considerations**

### **10.1 Gas, Fuel Canisters, and Other “Terrorist” Items**

Don't bring gas, gas cans, or even Sigg bottles that smell like gas on the airplane. We now live in an age when ALL bags are subject to X-ray and individual searches. The security folks who x-ray your bags WILL discover “the cylinder bomb,” unzip your bag, take it out, and destroy it if it smells like gas. You may find out only in Talkeetna that the TSA (Transportation Security Administration) in San Francisco took your gas canisters and you'll be unable to replace them easily without making a special trip back to Anchorage to get a fresh supply. (they will probably leave you a nice note telling you what they did and why however – don't bother to ask for reimbursement). Wash these containers out thoroughly both coming and going and leave the tops off. You may also want to label them as “water bottles” for the inspector. Ditto with stoves. Clean them up before and after you return from the mountain while in Telkeetna. It may help to include a note **INSIDE** your luggage telling the inspector that you are on a climbing trip and that's why you have all this gear. Don't ship Butane containers via the airlines. This is an invitation to be detained as a suspected terrorist bomber. Also be mindful of the current regulations concerning cigarette lighters packed in your luggage. I don't smoke so I don't pay attention to this, but I'm certain that Richard Reid (the inept nut job “shoe bomber”) made it illegal to transport any lighters on board the cabin of an airliner. Regulations vary about packing them in your checked luggage however so check to see what the latest is before you go. If they are still prohibited, buy them in Anchorage.

Alaska is an outdoor-orientated state with a well-stocked REI and an outstanding mountaineering shop called Alaska Mountaineering shop in Anchorage. You'll be able to buy just about anything you need at either of these stores. Check the locations and times of operation before you go.

### **10.2 Airline Reservation flexibility**

*Tip: Don't be driven by your airline schedule*

Airlines are charging more than ever to get anywhere, and one of the ways they recover their costs is to charge for the right to change your reservations. While it may be unavoidable to change your departure time, and thus incur such a charge, my advice is to use a carrier with as many flights into and out of Anchorage to your home airport that you can. This maximizes the number of seats available, which should make it easier for you to change your departure if you are early or late. Every time I've gone, I've booked a return flight at the latest date we planned for. This does two things: 1) eliminates the airline departure time as a part of your on mountain summit window discussion; 2) June begins the tourist season in Alaska, and getting a seat in mid June may otherwise be a problem if you are hoping to score one via standby after missing the one you booked for a week earlier. It would be really sad to have been one day away from the summit and have to turn back due to airline considerations. I've been able to change my flight every time I've done the mountain with this strategy.

### **10.3 Packing for the Flight**

As I've discussed above, climbing McKinley is a heavy enterprise. You'll need to carry most of this weight onto the airplane, and will probably have to pay for excess baggage fees. Here's a few tips in planning and packing:

1. Weigh your bags before hand. Most airlines will not charge you excess weight fees below 50 lbs / 22 kgs. It may be that it is easier / cheaper to pack three 50 lbs bags (one, \$50 charge) than pay two excess baggage fees for two 75 lbs bags (\$50 + \$50), call the airline before hand about their baggage policy. Be prepared to pay the excess baggage fee, ski bags, etc.
2. Combine your groups gear. This may seem obvious, but if you think as a group when packing, you may be able to save your group a bag or two over what you would have used if you packed as individuals.
3. Consider not packing food and buying it in Anchorage. This may save you up to 50lbs per climber or one standard airline bag – which may save you that \$50 in excess baggage fees. This will take you an extra day or two, but you may avoid the hassle of paying extra baggage fees. Of course this option is only for those that can trade time for money. Our group found it useful to have everything packed before we went allowing us to hit the mountain immediately upon arrival in Talkeetna (I was fortunate to have this happen 2 of the 3 times I did the climb, the other time in `89 we waited for a weather hole for 3 days in Talkeetna, then found the weather was terrible once we got on the mountain.

## 11 A Suggested Reading list:

- "Mountaineering: Freedom of the Hills": The Mountaineers. Good sections on Crevasse rescue, and general mountaineering.
- "Minus 148 below by Art Davidson": and you think the weather you had on Denali was bad, on the climb these guys climbed Denali in winter and lived to tell about it.
- "Surviving Denali": Jonathan Waterman 1983. A solid guide to what to bring and how to use it. The fuel recommendations are right on the money (similar to what I recommend in this guide).
- "In the Shadow of Denali; Life and death on Alaska's Mt. McKinley": Jonathan Waterman 1994 & 1998. ISBN: 1-55821-726-6. A good short (245 pgs) volume that will tell you what you are getting into from one that has been there as a climbing Ranger. *Included in this compendium is the story of the 1992 climbing season when eleven (11) climbers died.* Many of the stories are worth remembering while you're on the mountain, including the tale of how Mugs Stump (Mr. Alaska) falls into a crevasse and dies (Chapter 10). I would suggest having prospective partners read this book, then gage their desire afterward.
- "Mountain Sickness": Dr. Peter Hackett MD. ISBN: 0930410106. A small volume that describes the symptoms of HAPE & HACE. Perhaps the best short reading you can do on the subject.
- "Hypothermia Frostbite and other Cold Injuries": James Wilkerson MD, Cameron Bangs MD, John Hayward PhD. Certainly worth committing the symptoms and treatments to memory.
- "Endurance: Shackleton's Incredible Journey". Again, you thought you had it bad! How about stranded on Antarctic Ice flows from 18 months!
- "Climb Denali". By Laurent Dick. (pub 2004) A great picture book with a minimal, but accurate narrative. The pictures are first rate as well and give one a good feel about what it is like to "be there."
- "Denali" by Brad Washburn. A massive coffee table picture book of photos of the mountain taken by Washburn over many years, many are aerials taken by this famous scientist and mountaineer. This book is now out of print, but may be available through on-line second hand shops. The pictures are worth the price, but as a climbing guide, it otherwise has minimal value.

## 12 Denali will kill you (Disclaimer)

Climbing is dangerous. People die. Climbers die and get seriously hurt on Denali every year. I've seen the dead and the wounded being lifted off the mountain all three years I've been on the mountain. Do not use this as your only source of information. Double-check it with others. Read other texts, check with the Denali Rangers. Don't be arrogant. Be humble. This mountain **IS** bigger than you. **DENALI WILL KILL YOU** if you think otherwise.

*The author assumes no responsibility for any actions you may take after reading this article. If in doubt, descend; the mountain will be there next year.*



Figure 28: Alaska Range Memorial Board

Be sure the names of you and your team mates doesn't end up on this board.



**Figure 29: Denali from 8,000 ft, NE Fork of the Kahiltna (foreground), West Rib (middle), and Denali's 20,320 ft Summit**





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**Figure 30: Clouds “spill” over Kahiltna Pass at 11 PM: 12, 000 ft**

Photo Credit: Steve Shields, Copyright 2008 Steve Shields



**Figure 31: 11,000 ft Camp**

Photo Credit – Steve Shields. Copyright 2008 Steve Shields

Photo note: The walls around our camp from 11k on were always at least as tall as the tent itself. Having a stout snow saw to do the work is key to making snow blocks in hard snow is key. Also note the “labyrinth” entrance to the tent site. This prevents the wind from blowing snow directly into the tent hole.



**Figure 32: The “ants” Marching up the West Buttress from 14,000 ft to 16,000 ft. on a good weather day**



### 13 Comparison of Climbing Schedules

Table 7: Climbing Schedule Comparison

Denali 2005 Schedule Outline											
Sleep Altitude	Objective	Discussion	Weather Notes	Opptimistic schedule 2005 (dates)	Likely schedule 2005 (dates)	2005 Actual Dates	'97 attempt actual schedule - (Days)	AAI Guide Service advertised schedule (Days)	RMI Guided '01 Trip, from NG article	AMS Guide schedule (days)	Mtn Madness
~1k	Leave the bay area late in the afternoon, with arrival in ANC ~10PM. Hotel in ANK.	We have someone pick us up at the ANC airport in a bus for drive to Talkeetna. We could even leave Thurs PM, stay in Seattle and catch the 1st flight on Fri to ANK, to accelerate our schedule by some 6 hours. It may get us on the glacier earlier.	We move in any moderate weather 	19-May	19-May	19-May	1	1	29-May	0	1
7,300	We lave ANC in the taxi to Talkeetna, check in at the ranger station, and hopefully board the plane for the flight to the glacier	This can be iffy to Make all this happen in one day. Many parties wait days to be able to board the plane for the glacier flight With luck, we get there early enough in the day to make some progress up the glacier toward camp I at 7,900 ft - 5 miles away over good terrain.		20-May	20-May	20-May	2	2,3	day 1 on Mtn	1, 2	2
7900	Make it to camp I (base of "ski hill")	If we didn't get to camp I on day 1, we get there today, if we did, then we move a load up to 11k ft. 5 Miles, 5 - 6 hours if fully loaded		20	20	21	2	4,5	3	3	3, but return to BC, Day 4 move to 7.9k

7,900	Carry a load to Camp II, at 10000	Carry and drop off a cache - typically this is more than half your total load (mostly food), if we can't make it all the way, then we drop the cache wherever we can, and ski back down. Times and distances: 7.9k - 10.2k = 3.25 miles, 4 - 6 hours.				May 22 to 9500'	3	6	4 - full carry to 9.6k camp	Day 4, camp at 10k Khiltna pass	Day 5 cache at 10k,	
	Carry a load to 11k camp (camp III)	Carrying to 11k can be difficult in one day after only a couple of days on the glacier. 10k - 11k = 2- 3 hrs. 11k camp at base of "Motorcycle Hill"		21				8	5 - double carry to 11k			
	move to 10k camp	This is a bit short of 11k camp, but good enough			22	23-May	4	7		5	6	
11,000	Move to Camp 11k camp pick up load at 10k (double carry)	Move the camp to Camp II - drop skis here.		22	23	24-May	5	9		6	day 7 carry to just beyond WC	
	Storm Day reserved	We are pinned down somewhere below 14k			24	May 25 Pick up 9500 cache			6 - rest day	7		
11,000	Carry a load to Camp IV at 14,200	This will be a tough day! No skis beyond this point. Crampons and ice axe. Going is slow. May not make it to camp IV (Basin Camp - or Advanced Base Camp (ABC)) so will drop a load just before Windy Corner @ ~ 13,500. Route finding and objective danger increase from WC on. 2 - 4 hours to the plateau @ 12.5k, + 2 - 4 hours from	Weather must be good to move		23	25	May 26 1st carry attempt (T&J) S&S do carry successfully	6	10	7	8 - carry to 13.5 k around WC	

		12.5 to Windy Corner.											
14,200	Move to Camp III - Basin Camp	Another tough day. Must carry at least 4 days of food with us, plus warm gear. Packs and drag bags are heavy. If we reach Basin Camp at 14k early, and get tents set up (we will have to dig our own HUGE hole), we may be able to go back for the cache - this is unlikely however. Typical Time from 11k to 14k is 8 - 12 hours.	Weather must be good to move	24	26-May	May 27 Storm Day	7	11	day 9 on trip, day 8 on mountain	9	day 8 move camp to 12.5 or 14.2k		
14,200	Cache retrieval or rest day	Finally a rest day if the cache wasn't picked up. Otherwise, we go back for the cache		25	27	May 28 Carry to Windy corner & Cache - S&S move to 14k camp	8	12	Day 10 Pick up Cache; Day 12 Rest	9. move camp to 14.2k or pick up cache			
14,200	Rest day / acclimitization	Use this day to at least climb to the BOTTOM of the fixed ropes at 15.2k and have lunch.		26	28	May 29 T&J Move to 14k camp					10		
14,200	Rest day / acclimitization	Use this day to at least climb to the TOP of the fixed ropes at 16k for acclimatization.		27	29	30						11	
		Carry a load to 16.4k - guide group only				31 Go to 15.5 k			13		11		
		Move to camp at 16.4k -							14		13	12	

		guide group only											
14,200		We carry a load to 17.2 k: Time from BC to 17.2k: 8 - 12 hrs			28	30		9	15		14		
14,200	Storm Day	We are pinned down - at 14k - we get some exercise			29	31-May	June 1 Rest Day @ 14k	10		day 10 - day 15 (fuzzy here on date)			
14,200	Storm Day	We are pinned down - at 14k - we get some exercise				1-Jun	June 2 Rest Day @ 14k	11					
14,200	Storm Day	We are pinned down - at 14k - we get some exercise				2-Jun	June 3 Move to 17k	12, 13, 14					
17.2k	Move to Camp V - HC?	We wait for the weather window to open. Forecast MUST be for decent weather for 2 - 3 days before moving up. If weather is good for One day, we "may" do a carry to 17.2 k. Alternately, if we are acclimatized, we move to 17k with provisions for 3 days, and summit on the second day.	Weather must be good to move		30	3-Jun	June 4th Rest day - good weather		15	day 16 on mtn - aborted move to 17k		13	
17200	summit day or Move to Camp V - HC?	This could be a summit day, or if we have done a carry the day before, this is a move to camp IV day, then a summit day the next day. Must have good weather for 2 - 3 days. Times: 17.2k to Summit: 6 - 10 hours, Descent: 2 - 4 hours. Distace is ~ 4 miles, 3.120k foot gain	Weather must be good to move		31/ summit	June 4/summit	June 5th Storm		16 / rest day @ 17k	day 17 on mtn move to 17k	15/ Summit Day	14,15,16, 17 summit days	



17200	Summit Day opportunity #2	Weather must be good this day or we turn back. If we do summit, we move down to ABC the same day.		1-Jun	5	June 6th Summit day	Day 15, Steve Eckert summits	17/ summit day	Day 18 on mtn Party 1 summits: lv @ 8:30 am Rtn @ 8 PM	16,17,18 Alt Summit days		
14200	To ABC	Ideally we descend from HC to ABC on the same day we summit (Much better living here and worth the effort) HC isn't safe!		2	6	June 7 - 8th Move off the Mtn (24hr retreat)		18	Day 19 Party 2 summits: lv @ 11:30a m, Summit @ 8:30 PM, Rtn @ 11:30P M	19	18	
11k	Pick up skis	Descend to 11k or all the way to 7000' but It's hard to ski all the way out however.		3	7			16		20	19	
7200	ski to meet plane	We finish the ski out to 7k ft. We may end up waiting here for a plane if the weather is bad. Best to leave some food cached here. We may get out this day, maybe not.		4	8	June 8 Arrive at 7k @ 8 am after 24 hr retreat		17		21		
	Fly home			5-Jun	9-Jun	10-Jun		20				
Storm Days		These 6 days are left for waiting out storms, or making a second attempt at the peak from 14k. Remember we wait for the "perfect" weather window. Some of these days may be used trying to fly on or off the peak.	Weather must be good to move		10				21		20	
				11			22		21			
				12			23		22			

					13							
					14							
					15-Jun							
					<b>27 days total on Likely schedule</b>							

Note: Times for guide companies are taken from web sites, brochures, and other publicly available sources current to 2007 and 2008. They are meant to be illustrative, not advertising or comparative. These times are approximate and the companies may alter them at any time. Consult the individual companies for their time individual time lines and schedules. Do NOT select a guide company on time to summit considerations alone!

## 14 Other sources of information and Relevant News Items on Climbing Denali

### 14.1 Relevant News in 2008 typical of the climbing season on McKinley

From the web site of the public radio station in Talkeetna at 88.9 FM in early June 2008.

**A pretty good source for local and mountain weather if you missed the ranger broadcasts.**

<http://ktna.org/topics.php?aid=587>

#### **Weather Forecast predicts 90 MPH winds on Denali**

05/23/2008

Author: Sue Deyoe

**Climbers are battening down as the weather prediction is for high winds at the summit of Mt. McKinley over the next couple of days.**

The past few days of sunny weather meant good luck for at least some of the climbers on Denali. Over 38 climbers returned to Talkeetna from basecamp over the past few days. The Talkeetna Ranger Station expects to see about 50 climbers checking in today. The weather on the mountain is expected to deteriorate late this afternoon, and by Saturday afternoon, winds on the summit are expected to be close to 90 miles an hour. Winds at lower elevations may reach 60 miles an hour.

Maureen McLaughlin, public information officer at the Talkeetna Ranger Station, says that staff has tried to get the word to all climbers currently on the mountain about what in the weather world is called 'a wind event'.

Temperatures at base camp should be around zero tomorrow without the wind chill factor. Winds are expected to die down by Monday.

As of Thursday evening, there were 464 climbers on the mountain, with 136 people back from their climbs. So far there is a 38 percent summit success rate, not necessarily unusual for this time of year.

The Talkeetna Ranger Station now has a website that lists information on mountaineering summaries, updated every day, at [nps.gov/dena](http://nps.gov/dena).

#### **Denali climbing rangers make history with latest rescue**

06/04/2008

Author: National Park Service

**Climbing rangers, mountain guides and volunteers were all involved in the technical rope rescue of a solo Canadian climber on Wednesday. It is called the longest raising rescue in history of rescues on Denali.**

Denali mountaineering rangers made a life-saving technical rope rescue yesterday on the Peters Glacier.

44-year-old Claude Ratte, of Montreal, Quebec, was on a solo ascent of Denali and was descending the West Buttress from the high camp down to the 14-2 camp when he fell 2 thousand feet to the Peters Glacier. He suffered facial trauma and other injuries in the fall.

He dialed 911 on his satellite phone. Denali rangers were contacted by State Troopers and initiated a ground rescue.

The technical rope rescue, which included raising the patient up 2-thousand feet, before being lowered again, took a

total of 10 and ½ hours and involved 14 rescuers. Independent climbers, mountaineering rangers, NPS volunteers and mountain guides were all involved.

This rope rescue involved the longest raising operation in Denali mountaineering history according to information received from the Talkeetna Ranger Station. At least 10 significant climbing falls have occurred on the Peters Glacier over the years. In 1998, 3 separate climbing deaths occurred there.

Ratte remains in serious but stable condition at the 14-2 camp and is awaiting helicopter evacuation when weather permits. The National Weather Service calls for weather at 14,000 feet to be cloudy with possible snow and 15 below zero on Thursday. Chances of snow increase through the weekend. Summit winds might increase to 50 miles an hour by Sunday.

## 14.2 Park Service Web Site and information

From the Home page of the Talkeetna Ranger Station in June 2008. This page contains some interesting statistics from over 100 years of climbing. The home page for the Ranger station is also the site to register your climb as well as containing contact info for the rangers in Talkeetna.

<http://www.nps.gov/dena/planyourvisit/mountaineering.htm>

## Current Climbing Activity

Climbing Activity as of 6/7/08	Mt. McKinley	Mt. Foraker
Number of Registered Climbers	1268	20
Climbers Currently On Mountain	383	2
Completed Climbs	551	16
Number of Summits	261	1
Summit Percentage	47%	7%

The Talkeetna Ranger Station registration staff also maintains a 24-hour mountaineering statistics line at (907)733-9127. During the spring season, the voice recording is updated daily with the number of registered climbers, the number of climbers currently on the mountain, and the total recorded summits for both Mt. McKinley and Mt. Foraker.

<http://www.nps.gov/dena/planyourvisit/current-statistics.htm>

Lots of good information and interesting statistics on climbing the mountain here

## 14.3 Current Weather on Denali

Current Weather on Denali (available only during the climbing season)

<http://www.nps.gov/archive/dena/home/mountaineering/currentweather.htm>

click on the link on this page which should navigate you to this pages:

<http://pafg.arh.noaa.gov/wmofcst.php?wmo=SXAK49PAFG&type=public>