

## Safety in Numbers: A Catskill Christmas

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It was Christmas Day of 2002, and I had no family obligations for forty-eight hours. What better way to celebrate than to spend the night on top of Slide Mountain, the summit of the Catskills? The only nuisance was the storm predicted to roll in that afternoon. The forecast was for ten degree weather up high, with thirty mile per hour winds dumping three feet of snow by later that evening.

### **Planning: Safety in Numbers**

One way to make a trip safer is to go with lots of people. A collection of a half dozen trusted friends, all of whom are young, fit Special Forces Operatives and experienced paramedics on the side, can make any outdoor trip comfy. But this time I was going by myself, so I had to seek safety in a different kind of number. I brushed off the mathematical skills that I had learned in elementary school, and started to plan my outing.

I wanted to time my trip carefully. If I started too early, I would sit in a cold tent for too long. But I also wanted to be close to my camp on the summit when the storm hit around 3:00PM. A quick glance at the topo map showed that the top of Slide Mountain is about 3 miles from the parking area on Route 47. I know that I can usually walk about 3 miles per hour, so I allocated an hour to start with. But there is also a substantial amount of elevation to be gained: the map showed that the trail starts at about 2400 feet, while the top is at around 4200 feet, for an elevation gain of 1800 feet. My rule of thumb is to add an additional hour for every thousand feet gained, so the one hour turned into 2.8 hours. I therefore figured that I'd leave around noon, which would get me to the top before the storm was in its full fury, and with enough daylight to set up my home for the night. Now I had to choose my gear.

The forecast was for ten degrees, so my three-pound, fifteen-degree down sleeping bag might have been sufficient, had I worn lots of clothes to bed. But I wanted a safety margin, so I added a 1.5-pound, 30-degree down quilt that I use by itself from late spring to early fall, and that fits nicely over the other bag. The resulting 4.5 pounds of nylon and down would keep me comfortable to far below zero.

What tent to take? I considered a bomb-proof, two-person, four-season tent, but I didn't feel safe using my stove in its small confines on its nylon floor. I went instead with my four-pound Black Diamond Megamid: its floorless design saves weight, and gives me easy access to the snow that I'll be melting for my water.

I tested my canister stove before the trip, and brought along two new (but tested) canisters of fuel. I ignored my 22" [ ] and 30" [ ] snowshoes, and went for the big bad 36-inch 'shoes – they would be a bit clunky on the way up, but a real boon if the predictions of three feet of snow came true. With my car loaded up, I left home about 8:00AM – enough time to get there before noon, even with a bit of traffic.

### **The Walk Up**

I arrived at the parking area around 11:30AM, geared up, set the altimeter on my watch to 2400 feet, and left minutes before noon, when the temperature was about 25 degrees. I kept an eye on the altimeter the whole way up, and maintained a steady pace at 800 vertical feet per hour (I had to rein myself in a bit at first, and spur myself on near the end). The walk up took about the three hours that I had planned. (On other days, I've romped up Slide in just over an hour, but this time I respected the 40-pound load on my back, along with the five pounds of winter boots and five pounds of snowshoes on my feet – remember, a pound on the feet is like five pounds on the back). Apart from one person near my car, I had the whole mountain to myself – it was glorious!

As I neared the top shortly before three o'clock, at the intersection with the Curtis-Ormsbee Trail, I remembered some great advice that I first heard from Ranger Patti Rudge: "Stop before the top". I had been comfortable during the hard work of my ascent in a few light layers. But the temperature had dropped into the high teens (temperature typically drops about 3 to 5 degrees for every thousand feet of elevation gain), and I knew that I would soon be cold. I therefore took my pack off, put on the down jacket that I would wear for the rest of the evening, then kept on walking toward the summit, thereby pumping heat into the jacket.

### **A Night under Nylon**

I arrived on top about the time the wind picked up and the flurries turned to real snow. My first job was to build my cozy home for the evening. DEC regulations required that I be at least 150 feet from the nearest trail, so I took 51 large steps into the woods (if I stretch just a bit, my stride is about 3 feet long), and came across an ideal clearing. I stomped down a 9' x 9' square, and put up the Megamid. I brought my pack inside, took out my gear, and started melting snow (ensuring that the door stayed open to avoid the carbon monoxide buildup that can be deadly).

I had just about consumed the quart of water that I had hauled up, but I left enough to put an inch or two in my pot, and heated it up before I started adding in snow. I kept it going for the next couple of hours in a ritual of cycles: add more snow; pour out melted water to drink some and store the rest; take the old, cold canister off the stove and put it inside my jacket; take the warm canister out of my jacket, and put it on the stove. As I was doing this, I organized my gear, set up my bed, and snacked. After a couple hours of this process, I had a few quarts of warm water (that would sleep with me in my bag that night), I had drunk a couple of quarts, and I was ready for dinner.

Because I had been snacking the whole time, I had almost all the calories that I needed. But a hot dinner provides comfort that touches your very soul. This time, I heated the water all the way to a boil, and made my favorite freeze-dried spaghetti, letting it age to perfection for about nine minutes inside a reflective cozy (to reduce the heat lost by convection and radiation). Old Mr. Scrooge can keep his goose – my Christmas dinner was tastier. Outside, the temperature dropped to ten degrees, the wind blew and the snow fell, but I was snug.

And then I thought about a really interesting mathematical problem. There was a lot of snow out there. The wind was blowing hard on the open overlook above the Burroughs plaque, but I was protected by trees, and the snow was piling up on my tent; it may have only been six inches at the moment, but the forecast was for three feet. Even supposing that the wind blew some off, I could easily have two feet of snow by later in the evening. About how much would two feet of snow weigh across a  $9\sqrt{3}$  tent? I went through the following calculations in my head (absent the letters, which I include here for our mutual convenience):

- a. I know that a cubic foot of water weighs about 60 pounds.
- b. I know that one inch of rain makes about ten inches of cold, fluffy snow.
- c. From a and b, every cubic foot of snow weighs about 6 pounds.
- d. From c, a square foot of tent with two feet of snow has 12 pounds on it.
- e. I know that my Megamid is  $9\sqrt{3}$ , or about 80 square feet.
- f. From d and e, my tent has about  $12 \times 80 = 960$  pounds on it.

Yikes! I was potentially sitting under half a ton of snow. These numbers were by no means exact, but I was pretty sure the real number was within a factor of two. Whether it was five hundred pounds or a ton, there was potentially a lot of snow on my mind (and the rest of me, too).

That estimate provided great motivation. A few times every hour I would push the snow off the sides of the tent down to the ground. And then every hour or so I would go outside and shovel the snow away from the tent – a 36" snowshoe makes a great shovel. And thus continued my evening until the storm blew over around 9PM, just in time for my long winter's nap. Every time I woke up (I will affirm that I was very well hydrated, without detailing any indelicacies), I checked to make sure that the tent was clear of snow. The next morning, my home looked like this:



Several pokes of my hiking poles showed that the threatened three feet of snow ended up closer to 30 inches.

### **The Walk Down**

I've walked off Slide dozens of times, and I know that it usually takes just over an hour. But this time was different. I found that with every step, my giant snowshoes went down about ten inches (my hands, like many, are about 4 inches across). And then I had to lift the snowshoes up the same ten inches just to get level with the snow. But I got back to my car in a bit over two hours, with a beautiful treadway broken behind me, and half a quart of water left in my bottle.

The mountain gods were smiling on me. As I arrived, the snowplow was leaving a beautifully cleared parking area, with my poor Jeep reposing under a couple feet of snow. But I quickly cleared that (did I mention that a 36" snowshoes makes a great snow shovel?), and was soon on my way home.

### **Rules of Thumb**

I love walking in the mountains with friends, and I find safety in those numbers. But whether I'm with friends or alone, I find safety in numeric values. I use those numbers as I'm planning a trip, when I'm on the trail, and when I'm in camp. Here are some of the rules of thumb that I used on this particular trip.

Know the weather forecasts: 10 degrees, 30mph wind, and 3 feet of snow demand respect.

I walk at about 3 miles per hour, with an additional hour for every thousand vertical feet (as with all such numbers, your mileage will differ).

Know key altitudes on your trip: the Slide parking area is at about 2400 feet, and the top is at about 4200 feet.

Leave safety margins while selecting gear at home and when walking in the woods.

Know the temperature ratings of your gear.

Test your gear before a trip.

A pound on the foot is like five pounds on the back.

Bring enough food and water, and then some extra just in case.

Temperatures drop about 4 degrees for every thousand feet of elevation gain.

Pace yourself – don't go too fast or too slow.

Stop before the top: layer up about ten minutes before you stop ascending, to generate and capture warmth.

Regulations require that we camp 150 feet away from a trail.

My (long) pace is about 3 feet.

Start with a couple inches of water to melt snow.

If you put your dehydrated food into reflective cozy after you add boiling water, it will reduce the heat lost by both convection and radiation.

A cubic foot of water weighs about 60 pounds

A cubic foot of fluffy, cold, light snow weighs about 6 pounds.

My hand is about four inches across.