

Analysis

If this person had had his ice ax out during the fall, he could have arrested himself and prevented this accident. We often see people descending Tuckerman Ravine in icy conditions without the proper equipment, particularly in the spring. An ice ax and the ability to use it properly are critical for safe travel in steep terrain. The combination of the ax and the knowledge of its use provide a reliable means of stopping oneself on steep snow. (Edited from a report found on the Tuckerman Ravine website)

AVALANCHE, POOR POSITION, FAILURE TO HEED AVALANCHE WARNING, INADEQUATE EQUIPMENT

New Hampshire, Huntington Ravine

On December 20th three climbers were suiting up after breakfast at the Harvard Cabin when USFS Snow Ranger Jeff Lane entered the building. Jeff was in the process of writing the avalanche advisory for the gullies of Huntington Ravine and asking visitors what their plans were for the day. Jeff got into a conversation with two of the three climbers about avalanche stability issues and the Considerable and Moderate postings for the Ravine. Their plans were to climb for a couple of days, with Pinnacle Gully and Damnation Gully as the desired routes, the former being the main goal. With Pinnacle being posted at Considerable (danger for avalanche), Jeff called Chris Joosen on the radio about his thoughts and concerns about a party ascending Pinnacle Gully. Jeff and Chris agreed that that they could not recommend Pinnacle posted at Considerable or Damnation Gully posted at Moderate, but would instead focus on presenting the stability facts. Jeff discussed what gullies had more instabilities than others and convinced them Pinnacle was not a good idea. Although Damnation held the possibility of unstable slabs, they were less likely and not as widespread as areas posted at Considerable. After a 15-minute conversation, they said they would climb Damnation today and perhaps hit Pinnacle the next day.

The weather conditions as they entered the Ravine included snow, light winds, and limited visibility. They decided to head up to Pinnacle to look at it and then traverse over to Damnation rather than head straight up to it. After looking at Pinnacle from below, they traversed under Central Gully and began heading across the top of The Fan. They changed their plans partway across and headed back to follow their original plan to climb Pinnacle Gully. On the approach to Pinnacle, they began pushing through deep snow that they said was up to their chests. They felt that because it was loose and unconsolidated that it was safe and not in risk of avalanching because in their opinion a slab did not exist. When the three were about 25 meters from the bottom of the ice that marks the traditional first pitch, the slope fractured and failed above them just below the ice. At the time

of slope failure the first climber was a few feet above the second one and about 10+ feet above the third. KA was out front and yelled, "Avalanche!" and grabbed GW below him. All three were flushed down the slope but remained on the surface, cart-wheeling with the entrained snow. KA and GW were still next to one another about 75 meters below their high point, while KB was sent almost twice that distance farther down slope.

They were extremely fortunate to have no injuries and to remain on top of the snow. After shaking themselves off, they proceeded to search for missing gear and decide what to do next. Two wanted to climb the gully now that it had, in their opinion, been rendered safe by the release of its instabilities. The third was done for the day. They decided that they would all descend.

Analysis

Often it is only in 20/20 hindsight that the causes for an incident present themselves, but occasionally the natural world provides clues that were so obvious they should have been seen and heeded. Each year we have examples of common mistakes that have human factors and psychology behind them even though the natural bulls-eye information was there. This is such an incident. Here are the contributing causes:

Environmental Factors. At 7:00 a.m. the summit temperature was around 15 F with a south wind at 20mph. Approximately 3.5 inches of new snow was recorded at the summit while Hermit Lake in Tuckerman Ravine and the Harvard Cabin in Huntington Ravine each reported about four inches for the same period. Snow continued through the morning bringing another two to three inches to all areas by noon.

Pinnacle Gully is a steep E/ENE facing gully that is cross-loaded by south winds. In addition to spindrift and sloughing from up high, the entire first pitch is water-ice, which does not hold snow. All of this snow piles up at the base of the gully on a slope of increasing angle averaging between 30–35 degrees. This build up of snow accounts for the group's comments of chest-deep snow even though only four to five inches had fallen. The light 7.7 percent density snow and light winds explains their impression that slabs did not exist. Light density snow slabs can be practically indiscernible and although it appears unconsolidated and loose, even the slightest cohesion can create a slab. Slab density closer to the ice was likely increased by the packing of spindrifts and sloughs from higher in the gully. (Pictures taken right after the slide by the group showed constant sloughing from the rock face that forms the gully's left wall, further contributing to the accumulations on the slope.)

Human Factors: Jeff Lane spent 15 minutes of detailed conversation with the party about snow stability in Huntington and specifically the issues in Pinnacle. The discussion ended with Jeff not being able to recommend the

desired climb based on instability and the associated Considerable (danger) rating.

When traveling to various mountain ranges that have an avalanche advisory and one is able to speak personally with the individuals who developed the forecast, it should be acknowledged as key data. In addition to avalanche forecasters, there are ski patrollers, guides, Wardens, and Rangers working in local mountains that can provide valuable safety advice worth listening to. While one should not make decisions based 100 percent on the advice of others, it is a good idea to use personal focused advice from experienced local avalanche expertise as a critical tool to help in the decision making process when such expertise is available.

The group initially passed Pinnacle and then convinced themselves that it was okay. It becomes easy to overlook all the red flags when desire overcomes reason. One must enjoy our winter pursuits on the mountain's terms, not on a tight time schedule. It's easy to make a go/no-go decision on the days that are truly nasty or sunny and stable. It's the large spectrum in between these two when one must err on the side of caution and fight the desire to "squeak through" and "beat" the mountain. Snow stability is hardest to assess accurately when the margin of error can result in either a green light or red light situation based on how one is seeing the data. The bulls-eye data can be a little more difficult to pick out. For these reasons, most avalanche fatalities occur under a "Considerable Avalanche Danger" rating.

Safe travel rules were not adhered to and rescue equipment was not worn. Safe travel rules include 1) Travel one at a time; 2) Don't travel over or under your partner; and 3) Have a plan in mind about exactly where you'll go if an avalanche happens. Number three can be very difficult to manage in every situation, but rules one and two mitigate risk well and limit the number of individuals who may be put in a potentially hazardous situation to one. This is absolutely critical to individual and group survival if an avalanche does occur. Having only one person buried allows more individuals to focus on the rescue, thus increasing the odds of survival. On the other hand, having the whole group buried brings the group's chance of survival pretty much down to zero. These climbers were very lucky, as all of them were caught, entrained in the debris, and brought downhill. Had someone been buried, the big problem would have been the lack of beacons, probes, and shovels. If anyone was completely buried this incident would have likely turned out differently. (Source: Edited from a report on the Tuckerman Ravine website. These reports are written by the Snow Rangers: Justin Preisendorfer, Jeffrey Lane, Christopher Joosen, and Brian Johnston)

(Editor's Note: There were several other incidents on Mount Washington, mostly involving hikers and skiers who fell. Two skiers—separate incidents—were caught

in avalanches on Hillman's Highway. In some cases, hikers were wearing crampons while descending. For comprehensive information from the Mount Washington Avalanche Center, go to: <http://www.tuckerman.org/>

FALL ON ROCK, RAPPEL ERROR—RAPPELLED OFF END OF ROPE, NO AUTO-BLOCK AND NO KNOTS IN ENDS OF ROPE

New York, Adirondack State Park, Poke-O-Moonshine

On October 7 about 2:30 p.m., Dennis Luther (40s), an experienced climber, fell about 200 feet to his death from an advanced rock-climbing route up Poke-O-Moonshine.

He was working on a bolted route and then rappelled, apparently with no autoblock, on a doubled rope that wasn't knotted and rappelled off the end of his rope.

Adirondack rock-climbing guide Don Mellor, of Lake Placid, who climbed with Luther for over 20 years, was deeply saddened to learn of the accident Sunday.

"He's a good guy, a good friend of all of ours," Mellor said. "It's a gigantic loss to all of us in the local community, which is really tight." Luther earned great respect as a rock climber and was "very, very beloved by all his friends."

Analysis

For the third year in a row, we have a report of a very experienced climber coming to a tragic end as a result of a basic rappel error. (Source: Jed Williamson)

Additional Notes: Poke-O-Moonshine is a national caliber rock-climbing area, known for clean geometric lines and steep pitch, which makes it popular with advanced technical climbers. There are nearly 150 established "trad" or traditional rock climbing routes up the cliffs of Poke-O-Moonshine reaching 450 feet at the highest point. It is not unusual on a sunny weekend day to see 15 or more groups working their way up the rock fractures.

Poke-O-Moonshine, called "Poke-O" by climbers, has been a popular climbing area since 1955 with famed routes with names like "Bloody Mary," "The Cooler," and "Land of Make Believe."

One other fatal climbing accident occurred on Poke-O-Moonshine on Feb. 22, 2002, when a melting chunk of ice let go under Toronto ice climbing instructor Kevin Bailey. In all, five fatal climbing accidents have occurred in the Adirondacks, three on the loose rocks of Wallface at Indian Pass in the High Peaks, one on the cliffs at Chapel Pond in Keene Valley, plus the above on Poke-O-Moonshine. (Source: All information in narrative and notes from an article found on line at PressRepublican.com, and written by Kim Smith Dedam on October 8, 2007.)