

AVALANCHE, UNABLE TO SELF-ARREST

New Hampshire, Mount Washington, Tuckerman Ravine

On April 11, Daniel Zucker (46) from Danville, VT, and Tim Finnocchio (31), both athletic and experienced mountaineers, were climbing the steep snow route known as “Dodge’s Drop” unroped, each with two technical ice axes and crampons. They had recently climbed Hillman’s Highway and were familiar with the terrain on the Boott Spur Ridge. The plan was to climb the route to access the hiking trails to the summit of Mount Washington, then descend through Tuckerman Ravine.

For much of the climb, the surface conditions were refrozen springtime crust. The party reported they were enjoying the climbing conditions when on this surface. At times they encountered small areas of newer softer snow, but this surface was more difficult to climb, so they opted for the old surface when possible. Nearing the top of the climb, they encountered an isolated pocket of relatively new slab. Zucker reported he was unable to swing his axes through the new snow into the crust, his boots were getting full penetration when kicked into the snow, and the snow was fully supporting his weight. He stated that he decided to move left to get around the slab, both for stability reasons and for the easier climbing on the crust. As he was working himself toward the edge of the slab, the avalanche released.

Zucker recognized what was transpiring and was able to see the fracture line propagate upwards from his feet to a point about six to eight feet above him. The fracture then propagated outward and the slab began to slide downhill. Finnocchio was about ten feet below and slightly to the side of Zucker. He had both ice tools sunk into the snow. The initial slab, in which Zucker was entrained, pulled out more snow above Finnocchio. He attempted to hold on against the force of the slab pouring over him, but he was eventually pulled off his stance. Both individuals were carried downhill, and each reported being airborne at some point. Zucker stated he was impressed by how much time he had during the course of the slide to figure out what to do. He said he was unsure of whether to try to self-arrest or swim to stay on top. At one point he discarded one tool and attempted to self-arrest with the other. He felt the pick engaging the crust but was unable to stop himself. He also reported that during this time he saw his partner slide past him, indicating he at least managed to slow himself to some degree.

The avalanche carried them over a small cliff (hence Zucker reporting being airborne for “three heartbeats”) and down into a treed slope below. The compressive force of the snow impacting the slope below the cliff was quite strong; it ripped both ice axes out of Finnocchio’s hands, and they both felt as though their clothes and gear were also being pulled loose. They came to rest in the trees with most of the debris, though some of the debris continued to run farther down-slope. Both individuals came to rest on top

of the snow. No excavation was required.

Zucker suffered a small laceration on his forehead, a broken pinky finger, sprained ankle, some ligament damage in his knee, bruising on his thigh and shin, and abrasions on both elbows. The abrasions were caused by sliding on the icy crust while wearing only a synthetic t-shirt. Finocchio reported that he lost his vision momentarily when they came to rest but regained it soon after. He also suffered multiple abrasions on arms and hands, ligament damage in one knee, and a bruised pelvis. The climbers were escorted to the Snow Ranger cabin at Hermit Lake where they were more thoroughly assessed and treated. From here, they were transported to the parking lot in the USFS Snowcat, where they were released into their own vehicle for transportation to a local hospital.

Analysis

These two climbers were incredibly fortunate. This route is generally considered “no-fall” territory due to numerous rocks, cliffs, and trees in the fall line. The total vertical drop of their fall is estimated to be around 800 feet. They managed to pass through the rocky section of the fall unscathed, with the injuries being sustained only after being carried into the trees. Ironically the avalanche that caused their fall likely helped protect them from more significant injuries, as they probably rode on the debris cushion to their resting point. Falling this distance with crampons on, ice tools in hand, and going over small cliffs usually concludes much worse. That they were able to walk themselves down from an incident such as this is remarkable, to say the least.

The weather forecast had called for mostly cloudy skies, summit temperatures falling to 15 degrees F, and winds ranging from 25-40 mph. The morning avalanche advisory discussed the snowpack staying frozen for most of the day, with the best chance of warm soft snow being on south-facing aspects. Northerly aspects were expected to remain cold and frozen through the day.

From an avalanche perspective, the climbers had chosen a reasonable route. Although Dodge’s Drop is not one of the forecasted areas on the mountain, it is adjacent to Hillman’s Highway, which is one the eight slopes and gullies of Tuckerman Ravine subject to Avalanche Advisories. All eight areas were forecasted at “Low” at the time of the accident and where heavily skied without incident.

Many valuable lessons can be learned from this event. Two are offered here, as they are not uncommon occurrences on Mount Washington. First, it’s important to recognize that “Low avalanche danger” does not mean “No avalanche danger.” Isolated pockets of instability can be present under a “Low” rating; recognizing and assessing this hazard rests with the individual. Second, it underscores the importance of being able to assess hazards before

dropping in over the top of them. In this instance, there was at least one skier known to be hiking up Hillman's with the intention of descending Dodge's Drop. It's quite likely that this skier would have triggered the pocket if the climbers had not. Whether the hazard is avalanches, crevasses, undermined snow, etc., it's always a good idea to assess for hazards before descending from above.

FALL ON SNOW – UNABLE TO SELF-ARREST

New Hampshire, Tuckerman Ravine, Left gully

On March 14, a woman fell approximately 1,200 feet from near the top of Left Gully in Tuckerman Ravine. She was unable to self-arrest and quickly lost her ice ax, as she rapidly accelerated on the very slick surface. Along the way, her crampon caught the surface, resulting in an open angulated lower leg fracture. She also suffered arm and rib injuries before coming to a stop low in the floor of Tuckerman Ravine. Snow Rangers, MWVSP, and AMC personnel responded, treated her injuries, and packaged her into a litter. The litter was belayed down the Little Headwall to the top of the Sherburne Ski Trail. From there a snowmobile transported the litter to an ambulance waiting at Pinkham Notch Visitor Center.

FALL ON ICE – UNABLE TO SELF-ARREST

New Hampshire, Huntington Ravine, Central Gully

Approximately 15 minutes after being notified of the incident described above, Snow Rangers learned of a second incident unfolding in Huntington Ravine. A mountaineer had fallen from somewhere between the top of the Fan and the ice bulge in Central Gully. He slid approximately 1,000 feet through icy talus before coming to rest near the base of Huntington Ravine. He suffered numerous significant injuries, including a mid-shaft femur fracture. Bystanders began to provide care while assistance was sought out. By the time the Snow Rangers arrived, the victim was conscious and in severe pain. He was splinted and packaged into a litter, which was belayed one rope length to flat ground at the base of the Ravine, due to the icy surface. The USFS snowcat transported the victim to a waiting ambulance at Pinkham Notch Visitor Center.

Analysis

These two incidents have one strong central theme—that sliding falls on icy surfaces are very difficult to stop. In these cases, the crust was formed three days prior to the incidents with a warm, wet day followed by a sharp drop in temperature. Surfaces immediately became incredibly hard and slick and stayed that way through the Saturday. The morning's Avalanche Advisory stated, "The main safety concern today is the potential for long sliding falls due to the hard icy snow conditions... Bring your crampons, ice