



AAC Publications

Multiple Avalanches — Poor Position, Rope Cut, Anchor Tether Failure

Alaska, Chugach Mountains, Pioneer Peak

Pioneer Peak looms over the Knik River, northeast of Anchorage. The north face is a broad pyramid laced with gullies, starting at 500 feet above sea level and rising to the summit at 6,398 feet. The classic route follows a direct line to the summit ridge, beginning with 20° slopes and gradually steepening to about 60°. Along the way are a couple of steeper ice pitches, the first at about 1,000 feet into the route and the second at about 4,000 feet.

Fallon Connolly, 26, and Simon Frez-Albrecht, age 28 (both experienced climbers), started up the face at 5:45 a.m. on April 15. It had been 37°F at the car. After about an hour, they neared the first technical pitch (30 meters, WI3). Above this, they unroped and continued snow climbing for about two hours. The gully ramped up to about 50° shortly before the upper technical pitch.

Fallon observed signs of what appeared to be fairly recent avalanches on the gully walls. Simon had checked the weather stations in Hatcher Pass, about 25 miles away as the crow flies, for recent nighttime temperatures, and found they had been below freezing above roughly 3,000 feet the last couple of nights. The forecast for Palmer (halfway between Hatcher and Pioneer at 250 feet above sea level) was for a daytime high in the low 40s and rain in the afternoon. Simon figured the bottom half of the route would be above freezing, but anticipated the upper face could have good névé conditions. Indeed, the snow kept getting better and firmer the higher they got, but they later determined this was from being buffed by avalanches, not frozen solid.

Shortly before entering a pinch leading to the upper ice pitch, both heard/sensed a faint booming-rumbling sound or sensation that made them pause. They discussed it briefly. Could it be a distant sonic boom from military jets? Noise from the firing range? A snow whumph? After another minute, Fallon identified a similar sound/feeling, but they agreed to continue upward. They later deduced these had been distant avalanches on another aspect of the mountain.

Simon was about 50 feet ahead of Fallon and had nearly reached a position to anchor for the upper ice pitch when he noticed a very small (D0.5 or D1) wet loose avalanche come tumbling over the ice above. He yelled down to warn Fallon. Simon was standing to one side of the gully, and it didn't hit him, but it all washed directly over Fallon; she planted both tools firmly and put her head down to let the snow pass. They estimated the flow lasted 60 seconds.

After the flow stopped, Fallon continued up to where Simon was waiting and they moved together perhaps 50 feet up and to the opposite side of the gully, where there were some obvious cracks in the rock. Around 11:15 to 11:30, Simon dug some snow out and found a placement for a perfect number 2 Camalot, which he clipped into while placing a number 4 Black Diamond Stopper in the crack formed by a chockstone about a foot above. Simon equalized the two pieces with a 60cm Dyneema sling. They both clipped in, Fallon using an 8mm Dyneema runner girth-hitched through both hardpoints on her harness. Given what they had observed, they agreed it would be prudent to descend from this point.

To build a bail anchor, they dug snow out of a horizontal seam about two feet below the Stopper and forced a knifeblade piton in about halfway before it began deforming. Simon tied off the blade with

6mm cord and equalized it with the nut, intentionally shifting slightly more force to nut. He bounce-tested the anchor and then set up their brand-new 7.8mm ropes for a rappel, with the pink rope threaded through the masterpoint and tied to the green rope with a single offset overhand and a single overhand "backup." Fallon pre-rigged her device on the rappel ropes but did not install a friction-hitch backup. The number 2 Camalot was clipped to the ropes as a backup with a non-locker on a 60cm sling. Fallon remained clipped to the cord masterpoint with a locking carabiner as Simon began to rappel, using an Edelrid Giga Jul. When Simon was about halfway down, Fallon yelled to warn of an avalanche coming over the ice pitch above.

When Fallon saw the avalanche, she grabbed her tether near the carabiner and pulled close to the rock wall, keeping as much of her weight on her feet as she could. She was looking over her shoulder to see when the debris flow would stop when she was hit in the face by a block. She was knocked off her feet and was hanging fully from her tether, getting buffeted by debris. Her gloves disappeared, and her glasses fell off. She reached for the anchor to try to pull herself back upright but couldn't grab anything.

At around this point, the pink rope broke. (The climbers later deduced it was cut by an edge of the rock near the anchor.) However, the knot joining the two ropes jammed in Fallon's pre-rigged rappel device, keeping the green rope attached to the anchor via her belay device and her tether. At this point, Simon was fully hanging from the belay device rigged on Fallon's belay loop.

Simon had assumed the avalanche would be small, like the earlier one, so he tried moving to the side of the gully. However, debris almost immediately pulled him into the fall line, knocked him off his feet, and flowed over him. He felt rope slipping through his gloved brake hand and tried to hold on, but then had his hand knocked off the ropes and felt that he was sliding down the ropes in halting jerks. Eventually he came to a hard stop on the rope but kept getting pummeled. After one to three minutes, the flow slowed and then stopped. Simon stood up and found that a tangle in the green rope had jammed in his belay device, stopping him from going further. The pink rope was piled in a mess near him.

Once Simon stood up and unweighted the rope, Fallon got back on her feet and immediately noticed the pink rope had been cut. She grabbed the green rope and clipped it through the carabiner on the number 2 Camalot, but did not use a knot to anchor it. Simon and Fallon began trying to communicate—Simon yelling to fix the green rope and hurry down, Fallon not hearing clearly what he was saying. As Fallon inspected the anchor, the next rumble started above.

The second avalanche knocked Fallon off her feet, and instantly she knew she was falling. She tumbled down the slope in the debris, totally disoriented. Simon saw the second flow beginning to spill over the ice pitch and hurried to get behind a rock outcrop in the middle of the gully. A small, roof-shaped feature protected him as the debris flowed past, but then he was plucked from his stance by tugging on his harness. Almost immediately he understood that Fallon had come detached from the anchor and was falling below him. He tumbled head over heels down the slope until finally he was able to dig in his heels and stop after about 100 feet. Fallon had fallen 300 to 400 feet from the anchor to where she stopped.

The two yelled back and forth again, and Fallon started moving onto a small rib of rock outcrops in the middle of the gully. Simon untangled his ice tools from the clippers on his harness and hurriedly downclimbed and slid the 45° slope to Fallon. He noticed pain in his ribs on the right side during certain motions, but otherwise didn't notice any significant injuries. When Simon reached her, she was obviously in distress, and told him that she had lost her gloves, helmet, and ice tools. Her beacon had been torn out of the thigh pocket of her Gore-Tex pants. She got a second pair of gloves out of her backpack and moved off the rock toward Simon, who gave her one of his tools. He hurried Fallon to shelter in the lee of a larger rock outcrop just below them, providing a short rope for security.

Behind the rock outcrop, they caught their breath and formulated a plan. A raised area of the

snowfield on the other side of a large debris path led into a more defined rib sticking out between gullies farther down the mountain. They aimed to stay on this high point as they worked their way down the mountain. After listening carefully for the rumbling of another avalanche, they began to hurry across the gully to the high point. Simon was a few feet uphill of Fallon, keeping her on a short rope as they moved together. Getting on the high point, they again paused to catch their breath before continuing down. They were comforted by the rib gaining prominence as they descended, as well as the increased density of alders and spruce trees.

In the areas unaffected by the avalanches, they found knee- to hip-deep post-holing in the soft snow. As they got lower into the dense alders, the snowpack was thinner, and Fallon kicked off several collapses and small avalanches, sliding on a saturated layer essentially at the ground interface. Eventually the rib began to cliff out, so they made a 20-meter rappel off a clump of alders. More downclimbing through 45° alder slopes brought them to the anchor at the top of the first belayed pitch. They added a piton to the anchor, rigged what was left of their rope for a rappel, and then were able to walk down to the road. They reached the car at 4:45 p.m.; the temperature was 41°F and light rain was falling.

Simon's injuries included several rope burns and crampon pokes, a bruised rib, a strained left bicep and wrist, and other pain and stiffness. Fallon had painful (probably broken) ribs on the lower left side, badly bruised and swollen knees, two black eyes and a swollen lip, and cuts and soreness at various other points all over her body. (Sources: Simon Frez-Albrecht and Fallon Connolly.)

ANALYSIS

Reviewing incidents in the past, I (Simon) could point to obvious red flags or glaring mistakes in decision-making. The clues that we missed this time were more subtle, and therefore it's harder to draw conclusions about what to do better next time.

Apart from not going on the face at all or turning back in the first hour, we could not have been more fortunate with our timing. If we had been slower or had turned around when we first heard/sensed the ominous noise, we likely would have been unroped and right in the gun barrel when the slides hit, and we could have been swept to the bottom of the face. If we had been faster, I would have been leading the upper ice pitch, taking a lead fall as well as a pummeling.

Even though this is one of our local mountains, we had been away for the past two weeks, so were out of touch with the snowpack and weather patterns. The human factor known as "scarcity" made me want to jump onto the face—I suspected this might be the last day of the spring season to climb the route. We felt we had pieced together enough information to make an informed decision. I suspected the shed cycle had already happened in the previous warm, sunny days, so there wouldn't be a significant amount of loose/available snow left on the mountain to slide onto us. I didn't consider that the freezing at night had been enough to keep the snow locked in place, poised above us.

Probably the single most obvious clue we missed was that it had stayed cloudy the night before our climb, preventing the radiant cooling that had dropped nighttime temps in the previous days. This kept the snowpack wet and near the tipping point when the weak sun struck the face for a couple of hours through the clouds.

In the moments leading up to the avalanche, we felt good that we were heading down, heeding the warning signal sent by the small wet sluff. We didn't yet understand that this sluff was the last of several subtle warnings telling us that this was not a good day to be climbing on Pioneer.

Damage to one climber's harness sustained as she was hit by avalanches at a rappel stance on

Pioneer Peak. The harness likely would have sustained many kilonewtons of force to be damaged this way, yet both it and the anchor held. Ultimately, the climbers concluded, a screw-gate locking carabiner must have unlocked and detached itself from the anchor during the chaos of the avalanches.

I went back up about 10 days later when we had another spell of freezing nights. (This time the snow was crunchy underfoot right from the car.) I wanted to investigate the anchor to see why we had come off, but didn't find much in the way of answers. The nut was firmly locked in place, with that leg of the anchor cord and the masterpoint still in good condition; the cord that I had tied off on the piton had been cut. The Camalot above was still in place, with the sling and non-locker dangling from it, slightly deformed. Fallon's tether and the locking carabiner came down with her when she fell. Why had she come unclipped from the anchor? The only conclusion we can draw is that the screw-gate locker with which Fallon clipped her tether to the masterpoint must have jiggled to the unlocked position during the first avalanche. Then, when she unweighted the tether, the locker must have shifted into a position where it could unclip itself when the second avalanche pushed her back onto her tether.

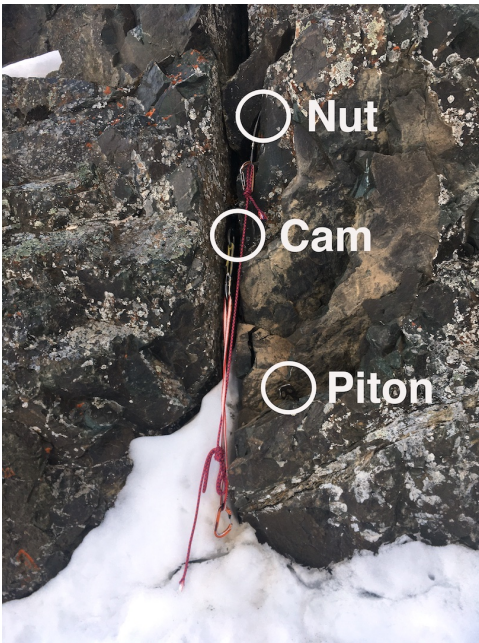
As I inspected the anchor, I identified a sharp rock edge below and to the side that matched up with where the rope had been cut. We concluded that the large oscillations and force on the rope during the avalanche, as it loaded over a sharp edge of rock, had cut the rope.

Over the last year or two, I have been making a conscious effort to increase my safety margin while climbing. This includes tying knots in the ends of ropes during rappels, using a rappel backup, and using autolocking carabiners and assisted braking belay devices more often. I had recently been toying with pre-rigging rappel devices as well, but was not doing this consistently. For whatever reason, this was one of those times we pre-rigged Fallon's belay device on the rope, and by snagging the knot joining the ropes after our pink rope cut, it happened to keep me alive. (Source: Simon Frez-Albrecht.)

Images



The north face of Pioneer Peak in winter, rising more than 5,000 vertical feet. The lower route line is shown, with (X) marking the spot where two climbers were avalanched.



Post-avalanche view of the anchor on Pioneer Peak. The anchor remained mostly intact; only the cord connected to the piton had failed.



The rope that cut on Pioneer Peak likely failed when it sawed against a sharp rock edge by the anchor.



Damage to one climber's harness sustained as she was hit by avalanches at a rappel stance on Pioneer Peak. The harness likely would have sustained many kilonewtons of force to be damaged this way, yet both it and the anchor held. Ultimately, the climbers concluded, a screw-gate locking carabiner must have unlocked and detached itself from the anchor during the chaos of the avalanches.

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