



AAC Publications

Fall on Rock — Carabiner Cut Rope

West Virginia, Monongahela National Forest, Seneca Rocks

In this highly unusual accident, the carabiner on the rope-bearing end of an alpine quickdraw appears to have acted like a belay device configured in guide mode. The load-bearing/climber strand (on top) trapped the belay strand (on bottom, under the carabiner) between the carabiner and the rock. The rope was severed. No rock edge was involved in cutting the rope, and no rope sheath material was observed on the rock. Illustration: Foster Denney

On August 5, a party of two started up Simple J Malarkey (3 pitches, 5.7). The top of the second pitch ends in a corner alcove with overhanging rock above. At the start of the third pitch, the leader, Danny Gerhart (24), placed a 0.75 Camalot just above the belay, before attempting to climb up and left. The leader encountered a wasp's nest and stepped back down to the belay. He then stepped down and to the right on the ramp that ends the second pitch. This was the sequence most used by other climbers.

Gerhart was now about five feet away from the belay. He placed a second 0.75 Camalot before moving up and left to a second alcove, about eight feet above and to the right of the belay. Here, Gerhart placed a number 3 Camalot in a shallow, slightly flaring pocket. (This piece was found with both extended and non-extended alpine draws attached.) At this point, he removed the second 0.75 Camalot to prevent excessive rope drag.

Gerhart attempted to move up and right from this stance, which is on route. This crux section requires the leader to move out over a roof on a four-foot-high plaque of rock. Though protection is available, the leader cannot see it until they have committed to the crux, and even then, the placement is behind the climber and at waist level. The handholds here could be described as less than inspiring, as water drains onto them from above, adding a polished feel to the rock. Having found no gear, Gerhart stepped back down to the previous stance and discussed options with the belayer. By then, the sun was peeking over the top, making route-finding more difficult. The climbing team discussed options before Gerhart decided to move up and left.

Climbing above the last piece and not finding additional protection, Gerhart called down to the belayer, informing them that he was going to take a deliberate fall (acknowledging it was "going to be a big one"). He then let go and fell around 12 feet before loading the rope. The belayer reported having enough time to take in two to four feet of slack before hearing a very loud "gunshot" as the rope exploded. The belayer never felt the falling climber load the belay, and Gerhart fell approximately 130 feet to the ground.

While numerous climbing parties immediately responded to give aid, the fallen climber passed at the scene.

Evidence points to the rope being cut by the carabiner on the extended alpine draw attached to the number 3 Camalot. The carabiner remained attached to the fully extended alpine draw and was found lying on a slabby portion of rock just below the Camalot. Fuzzy remains from the rope sheath were found inside the carabiner. No rope sheath material was found on any nearby rock edges or the slabby rock face.

Photos from the accident scene show about seven feet of rope extending from the tie-in on Gerhart's harness. Three to four feet of core was exposed where the rope cut. The individual core bundles were

all severed at the same length; this indicates a definitive “cut” versus extended shredding over an edge.

ANALYSIS

How the carabiner cut the rope is difficult to visualize. But here is my attempt to explain it.

The rope leaving the belayer moved up through the first piece and past the slightly overhanging rock above. The overhang included a six-to-eight-inch-wide V-slot that likely inhibited the belay strand from moving laterally to the right. At the time of impact, the belay strand of the rope would have been lying on the slabby rock face above before entering the backside of the carabiner, which in turn was clipped to the extended draw and number 3 Camalot. In the same way the load strand in an ATC Guide locks down on the belay strand, so did the leader’s end of the rope. It wrapped around the carabiner, crushing down on the belay strand and the rock below it, and thus focusing the entire load of the fall onto the small section of rope between Gerhart and the cam.

In essence, Gerhart took a factor-two fall onto the carabiner. In fact, he may have achieved something greater than a factor-two fall, as the pinched rope effectively reduced the rope in the system to around six feet. I’ll leave it up to someone more qualified to calculate the force load of a climber falling an estimated 9 to 11 feet on around six feet of rope and all that energy being applied at the bend at the carabiner and onto the belay strand. Needless to say, it was enough to instantly sever the rope.

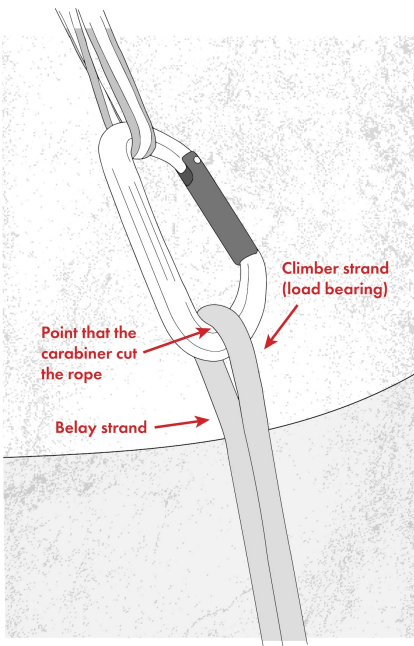
One tragic fact: It’s quite possible that Gerhart’s extended sling may have perfectly positioned the carabiner at the time the piece was placed, but then tragically the carabiner shifted into the fateful position. Had the carabiner been just two inches to the left or right, it would no longer have been lying on rock but hanging in free space. Would extending the sling on the first piece Gerhart placed have changed the location of the carabiner in question at the time of impact? This is unknown, as the first piece was ultimately removed by the belayer before they rappelled to the ground, so we were not able to replicate exactly how the rope was running.

Apart from the fact that Gerhart was off route at the time of the accident, this was, in my opinion, a freak accident. Two inches of movement in the carabiner could have made the difference between life and death. (Source: Arthur Kearns, guide, Seneca Rocks Climbing School.)

Images



The third and final pitch of Simple J Malarkey climbs through the overlaps and triangular roofs seen here rising above and slightly left of the prominent cave. This pitch was the scene of a fatal rope-cutting accident (marked with a blue X) in August 2023.



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