

anchor point was used for two rappelling ropes. The ropes were looped over and partly around a large, three meter in diameter rock outcropping, with one rope being placed over the top of the other. The top of the rock had a large groove cut across it in which the ropes rested. From this point to the ground was a distance of about ten to 12 meters.

Kelly Hernandez, an instructor, set up the rope system and stayed at the top of the site to check/assist the safety of those descending.

About three hours had gone by when Mike Hughes and Mike Tumminia (14) began to rappel down the rock face. Tumminia's rope (at the anchor point around the rock) was on top of Hughes' rope. They descended about ten meters, Hughes on the left and Tumminia on the right. Tumminia pushed away from the rock face in an attempt to do a short, free rappel. When he did this, the looped part of his rope being used as the anchor slipped/flipped off.

Mike fell approximately five meters to the ground, landed on his feet, and fell backwards. He was stabilized and transported by his father to the Hi-Desert Medical Center in the town of Joshua Tree, where he was diagnosed as having a fractured pelvis and compression fractures of two vertebrae. (Source: From a report by Mike Brinkmeyer, Ranger, Joshua Tree National Monument)

Analysis

Anchors need to be checked continually, both by guides/leaders and clients, during training sessions or at rappel points where a number of climbers/clients are gathered. It also seems that no belay was being used in this situation. Belaying rappellers is common practice, especially in training sessions like this. (Source: J. Williamson)

FALL ON ROCK, INADEQUATE PROTECTION— CARABINER GATE CAME OPEN

Colorado, Eldorado Springs

On April 3, 1988, a male climber (27) fell while attempting a difficult move and tried to grab a sling on the last protection piece while falling. Last protection piece was a bolt, and the carabiner sat snugly against the rock causing it to stay somewhat horizontal. When falling, the leader grabbed the sling; it was resting on the gate which was oriented up and the sling opened the gate. The leader fell five to ten meters, striking his head on the way down. The victim had no significant blood loss or internal head injury. Lacerations received no sutures. (Source: Eldorado Canyon State Park)

Analysis

Use of two carabiners when clipping into a "cramped" bolt and not placing fixed bolts in such a way that the carabiner won't hang free would be a solution for this situation. (Source: Eldorado State Park)

FALL ON ROCK, PROTECTION PULLED OUT

Colorado, Rocky Mountain National Park

On June 1, 1988, about 1400, during a technical climbing patrol, two climbing rangers were attempting a new route on Checkerboard Rock, a small crag on Lumpy

Ridge. The area they were in was just left of a route called Broken Wing. Ranger #1 had spent the morning working on the first ten meters and at that level he put in the first bolt (3/8 inch diameter x 1 1/2 inch shaft, Star-Dryven). He then lowered off the bolt to rest and Ranger #2 (22) decided to go up and work above the high point. He passed the bolt and continued approximately another three meters where he placed four more pieces of protection, claiming that each one individually was dubious, but that the four combined should be sufficient in supporting his weight while he drilled another bolt. He worked on the hole for approximately 20 minutes, during which the drill bit became repeatedly stuck and he would have to pull furiously on the bit to get it out of the hole. This certainly put further stress on the protection from which he was hanging.

He finished the drilling and was preparing to put in the bolt when suddenly the protection he was hanging from pulled and he began falling. At this point the first bolt was just below him and should have arrested his fall, but instead the bolt pulled out without even slowing him down. A knifeblade also pulled and he then impacted the rocks and continued into a nearby chimney where a marginal 3 1/2 Friend finally stopped his fall.

As soon as he was able to speak (30 seconds to a minute), he complained of pain in his pelvis as well as numbness in his left leg. At this juncture, it was established that he was alert and oriented times three. Ranger #1 moved to a small ledge just beneath the victim and directed the lowering of him onto the ledge. He positioned him as comfortably as possible, padded him and anchored him. Assessment of the victim continued until the rescue was completed. Radio contact was made within two minutes after the fall to park dispatch and he continued to relay medical information as well as receive information from Paul McLaughlin (Strike Team Leader), who was enroute during the assessment. Victim was stabilized, assessed, and vitals were taken three times by the time McLaughlin arrived and took over coordination of the rescue, which was completed by 1930. The victim suffered a fractured pelvis and elbow. (Source: Rocky Mountain National Park—various reports)

FALL ON ROCK, NO HARD HAT, INADEQUATE PROTECTION

Colorado, Glenwood Springs

In June, a climber (age unknown) was leading a moderate (5.6-5.7) route in No-Name Creek when he/she fell from ten meters off the deck, six meters above protection. Victim landed on soft ground, but broke right tib-fib, then struck head against neighboring boulder. Victim survived for two hours after the fall. (Source: Wyman Bontrager)

FALL ON ROCK ON DESCENT—AFTER FREEING RAPPEL ROPE, LOSS OF CONCENTRATION, UNROPED

Colorado, International Wall

On June 25, 1988, a 175 meter route was completed on a granite wall (International Wall) approximately one half mile west of Shoshone Dam. The first rappel was completed by both members of the party. The rope became stuck on the pull down for the second rappel. Mike Collett (32) unclipped from webbing and free climbed back