

crampon snagged in the snow. This resulted in snapping the two bones (tib/fib) of his lower leg and throwing his body over his feet, sending him into an uncontrolled tumble. (Source: Mike Gauthier, Climbing Ranger)

FALLING ROCK HITS CLIMBER—DESPITE DOING ALL THE RIGHT THINGS

Washington, Mount Rainier, Disappointment Cleaver

On July 29, Estee Fernandez (29) was descending the base of the Disappointment Cleaver with her partner when a two-foot diameter rock hit her in the back, knocking her about ten feet down the slope. She and her partner walked to Camp Muir and contacted the guide service who then contacted the Park Service.

As there was a language barrier preventing good initial communication, the mechanism of injury became the deciding factor in evacuating Fernandez by air. A Bell 206 Long Ranger piloted by Doug Uttecht flew Climbing Ranger Andy Anderson to Camp Muir to pick up Fernandez who was loaded on a backboard and the two were flown directly to Harborview Medical Center.

Analysis

The Disappointment Cleaver is notorious for both natural and human-triggered rockfall. Fernandez and her partner were fairly experienced climbers from Spain. They were fit and knew that they could move fairly quickly on the route. Most parties leave from Camp Muir between midnight and 2 a.m. Often this will create a traffic jam on the route and cause people to stop in zones where rock and icefall are a hazard. Fernandez and Jon knew this and chose to leave later than most people at 2:30 a.m. to avoid the crowds. Fernandez and Jon climbed to the top of the Cleaver without running into any of the other parties. They caught up with and passed all of the other climbers between the top of the Cleaver and the summit. To stay ahead of the crowds, they descended quickly and well ahead of all of the other parties.

This accident illustrates that even when you make good decisions the mountains can be dangerous. Fernandez and her partner knew their fitness and skill levels well enough to determine their own safe time to depart rather than following the decision of the masses and ending up in a traffic jam. They had proper equipment and clothing, including helmets. They were traveling early in the day when natural rock and ice-fall are presumed less common. Fernandez said that they also had not exhausted themselves on the climb because they wanted to be alert and safe on the descent. Short of having lightning reflexes and being able to dodge a rock that is falling toward you from behind, there is not much more that these two could have done. Even after the accident they did the right thing: having determined

that she could still move and not wanting to wait for help in an area proven to be a rockfall zone, Fernandez and her partner continued onto a safe place where they could get help.

Mount Rainier is not known for the high quality of its rock, but rather for the fine snow and ice that hold the volcanic rock in place. The common belief that natural rockfall is minimized by climbing early in the day when the snow and ice are holding the rocks together and meltwater is at a minimum appears to have some validity, but there are other factors to consider. One such factor is that water expands upon freezing. Since the coldest time of a 24-hour summer diurnal cycle is generally around 4 or 5:00 a.m., it stands to reason that water droplets behind rocks are as likely or more likely to undergo freezing at this time. The expansion forces of these crystals are known to be huge and doubtless they may pry rock and boulders from their perches. This may at least partially explain the common movement of rocks during the coldest time of day and the countless rockfall accidents that occur even in the wee hours of the morning. (Source: Mike Gauthier, Climbing Ranger)

(Editor's Note: Other incidents on Mount Rainier included the following: Three stranded climbers who were trying to travel light and fast, but who overestimated their skills and physical abilities. They exhausted themselves and had to seek help from the rangers. Two medical incidents, not included in the data, were a 39-year-old man who experienced torn chest muscles and a 52-year-old man who did not reveal a previous history of back problems. Rangers had to take them from high camp by sled.)

FALL ON ROCK, RAPPEL ERROR—RAPPELLED OFF END OF ROPE

Wyoming, Lander, Sinks Canyon

On May 4, Jim Ratz (52) fell to his death while rappelling from a route called Honeycomb, four miles from his home in Lander.

The following description and analysis were the result of careful investigation on the part of the individuals cited below.

The climbing area and route. Honeycomb (5.9+) is a climb in Sinks Canyon State Park on the first sandstone buttress on the north side of the mouth of Sinks Canyon near Lander, WY. The climb is approximately 160 feet from the base to the top. There is a rappel anchor approximately three quarters of the way up the climb (about 120 feet) on a sloping ledge that is almost a hanging belay. There is another ledge, about 60 feet up from the base of the cliff, that is beneath the honeycomb (most difficult) section of the climb, which we will refer to as the "lower ledge." The lower ledge is very large and flat.

The plan. Jim set out at noon to do some laps (cycles of climbing up and rappelling off) on Honeycomb and to scout a location to add a bolt to