

done extensive research on this route. They had been to the base of the route three times prior to this attempt and were familiar with the terrain. Despite their experience and knowledge, they chose to ascend the most hazardous part of the face in the heat of the afternoon when rockfall is at its worst. This turned out to be a critical judgment error. Luckily both climbers had helmets on, which undoubtedly saved the female climber's life. (Source: Parks Canada Warden Service)

FALL ON ICE, EQUIPMENT FAILURE

Alberta, Banff National Park, Mount Aberdeen

On August 20, L.S. (40) was guiding K.B. (61) on Mount Aberdeen. They reached the toe of the Aberdeen Glacier at approximately 0700. They moved together on a two-meter short-rope up 50 meters of firm snow and started to traverse 25-degree ice to reach a stance at the base of the steeper ice. K.B. slipped and L.S. held his weight easily. While K.B. was regaining his footing, L.S.'s crampon broke and they fell together down the glacier. After sliding for about 30 meters on the rock covered ice, L.S. was able to self arrest and they stopped at a small rock pile. K.B. had fractured and dislocated the head of his humerus and had back pain. After applying first aid to K.B. for several minutes, L.S. realized that he had broken his ulna and dislocated his radius (both lower arm bones) in the initial fall. L.S. was able to call the Banff Park Warden Service through the Lake Louise Ski area and request assistance. The climbers were slung out within the hour.

Analysis

Short-roping on low-angle ice and snow is standard practice amongst Mountain Guides. It is a necessary and effective tool that relies very little on equipment except for the rope, ice ax, and crampons. However, when the equipment fails or the techniques are poorly applied, the results can be catastrophic. In this case the crampons were very high quality (Charlet Moser S12 with heel binding and toe lanyard) but well used. The crampon strap broke on the outside of the guide's left foot. His left leg was braced flat-footed on 25-degree ice to hold his own and the client's weight, so when the strap broke the whole system fell apart. The strap looked like it had been cut, so it is possible it had been damaged while walking through snow covered rocks or while mixed climbing. The use of the radio in an area with an excellent mountain rescue service made the solution to a very difficult situation simple. (Source: L.S.)

FALL ON ROCK, LOOSE ROCK, FATIGUE

Alberta, Banff National Park, Mount Victoria

I (35) was climbing with two friends, H.N. (32) and E.D. (26) on August 28. We departed from the Abbot Pass Hut early Saturday morning to attempt a south to north traverse of Mount Victoria. The weather and conditions were excellent, and we were equipped for a likely bivouac around the north summit. We took a brief break at the main summit at about 1100. We continued on down and north along the ridge where we encountered the first of some very

loose though not technically difficult climbing. Following this pitch the difficulties eased and the climbing was mostly fourth-class. We were roped and using running belays. At about 1630 and after a lot of exposed climbing we were nearing the end of the rotten towers on the route. I stepped on a large flat rock, which shifted under my weight. I had to jump back to avoid slipping off the west side of the mountain. I had been leading all day and after the incident realized that I was quite tired and set up a belay just past this point and was joined by my partners. We took a break and I asked H.N. if he could lead from there because I didn't want to make any kind of mistake in the gear placements over the next few pitches. H.N. led off across some steepish terrain that was a mixture of snow and ice, and there was some discussion about whether it was better with or without crampons. E.D. and I decided to wear crampons. Approximately ten meters after the belay, there was a short, steep, very loose down-climb. H.N. was able to place a solid tri-cam at the base of the section, and then another solid midpoint anchor before the easier ground. As I entered this section I turned to face in and gently work myself down through the loose rock and I slipped. It is possible that my crampons skated on the rock, or that the loose rock all collapsed out from under me. The tri-cam was placed horizontally in solid rock and slightly above where I was standing, but was approximately ten to twelve meters away. As a result I took a long pendulum fall, bouncing hard three times before coming to a rest below the tri-cam. During the fall I tried to stop myself and this is what likely resulted in the severe lacerations to both of my hands. Very shaken, I came to rest on a small snowfield. There was a lot of blood coming from my hands. I was belayed on a tight rope to E.D., who was at the midpoint anchor. We bandaged my hands, changed positions on the rope, and I was belayed from both ends across to the leader's station where we debated what to do. As we reassessed my injuries, it became apparent that there was some potential damage to my back and possibly some broken ribs which were becoming more painful by the minute. It was also apparent that my right hand was virtually unusable. As a result we contacted the wardens by cell phone and requested assistance. We were plucked off the ridge approximately an hour later by heli-sling and I was taken to hospital by ambulance. Injuries included at least one rib separated from the cartilage on my right side, severed muscles in my right hand between the thumb and forefinger and a deep laceration in my lower left palm. (Source: victim)

Analysis

It is possible that the fall was caused by the climber wearing crampons in the rocky section. Whether to wear crampons in certain mixed terrain can be a tough decision. In this case, one person had made it through the section without crampons, one had made it with crampons, and the final climber was unlucky. (Source: Parks Canada Warden Service, Nancy Hansen)

FALL ON ROCK, HANDHOLD PULLED

Alberta, Mount Laurie (Yamnuska)

On September 17, C.H. and C.S. were climbing "Grillmair Chimney" (5.5) on