chute, formed where the edge of the glacier met the adjoining scree slope, may have drowned the calls. When the rocks were less than 20 meters from him, Langford was seen to turn and go into self-arrest position. One of the rocks hit him on the back of the top of his climbing helmet. It is estimated that the rock weighed 25 kg and was sliding at more than 30 kilometers per hour when it hit him. Ken Brameld, the middleman on the first rope, shouted, "He's been hit. Phil's been hit. On the head." And then Ken Brameld and Brent Hostetler went into arrest position.

Because of the danger of further rockfall, it was necessary to get the victim and those attending him out of the chute as quickly as possible. Andy Dunning found a safe site on the scree slope about 10 meters away. Jack Northcutt prepared the site for the victim. When the examination of the victim had been completed and his wounds dressed, Brent Hostetler and Jack Northcutt, with a little help from the victim, brought him up to the site. No further injuries had been found.

Brent Hostetler and Jack Northcutt went for help about 1445. A bivvy site was prepared, and a comfortable night was spent. At 0630 the next day, rescue personnel arrived, and by 0930, Langford was evacuated by helicopter. (Source: Andrew Dunning, Leader)

Analysis

The accident clearly demonstrates the importance of wearing a hard hat even at times when there is no immediate or obvious rockfall danger. Without a hard hat, the victim would almost certainly have been killed in this case.

The accident also raises the question of what should be the correct response to rockfall. Should we try to get out of the way, or should we try to protect ourselves? Climbing textbooks do not give any guidance. It appears, however, that whereas most novice climbers try to protect themselves, experienced climbers usually adopt a strategy of carefully watching the falling rock, and moving smartly out of its way, at least for rockfalls consisting of only one or two rocks. (Source: Andrew Dunning, Leader)

FALL INTO CREVASSE—PRECEEDED BY OTHER INCIDENTS

Washington, Glacier Peak

On September 3, 1988, a party of five Seattle Mountaineers started out for a three-day Labor Day climb of Glacier peak via the Vista Glacier. There were nine of us, three rope leaders and six basics. The weather was too good. New temperature records were set in Seattle, and no doubt would have been set along Milk Creek, too, if anyone had been recording there. The first incident of the trip occurred about seven kilometers in, when I stepped off the trail to look at some mushrooms, stirred up a hornet's nest, and was stung once in the leg and once in the ear. The latter caused half my face to swell up noticeably and my pulse to race. When I stopped to rest, I became dizzy and nauseous. After almost an hour's rest, some food and water, and an antihistimine tablet, we pressed on, with some party members graciously taking some weight from my pack.

Next the heat began to take its toll. The 19 kilometer approach begins with a gentle forest walk, but just after the midway point climbs directly up a steep ridge by an interminable series of switchbacks through shadeless slide alder facing into the afternoon sun. Basic student Larry McConnell slowed to a pace which made it doubtful that he would reach high

camp before dark. We conferenced and McDonnell elected to turn back.

Next to succumb was rope leader Jim Borgman. He was in the rear of the group, but sent word to the rest of us via a horse party which, he reasoned, would catch us before we reached camp.

From about 1830 to 1900, the surviving seven climbers straggled into high camp at 1700 meters at the headwaters of the East Fork of Milk Creek. Basic Scott Eby could not keep down any solid food, and the consensus was that he was severely dehydrated and exhausted. He said he probably would not be going with us the next morning.

Six of us left camp a little before 0500 Sunday, September 4. We made fair time over talus, across the Ptarmigan, then the Vista Glacier. When we were high enough to see the route, I conferred with rope leader Jay Matsen, and we decided that the Frostbite Ridge/Rabbit Ears route was unacceptably steep for our party, considering the hard snow conditions.

We went right, descended, and began climbing via the Kennedy Glacier. Crevasses and a steep headwall forced us to the right, but everyone was moving well and we made good time. We passed a party of two who had come up from the lower Kennedy.

About 2750 meters we reached a very broken-up area. My rope team was in the lead. I tried to push the route straight up, but it was not suitable for a basic party. Jay Matsen took his rope off to the right and found a route. It involved a jump of about 45 centimeters across and 60 centimeters square. After the jump, the climbers had to walk off to the left along a narrow crest of snow, then up a steep slope. Matsen took his rope over first. The jump caused a bit of anxiety, but his team all made it. Then I led my rope over, and was followed by middleman and basic grad, Anthony Falcone. Basic student David Kendall (41) was last on our rope and last in the party to face the jump. Kendall approached the edge, said aloud to himself, "I can do this," and jumped. He hit, rocked forward, lost his balance, and rolled forward and to his right down into a crevasse.

As Kendall fell, he pendulumed downslope and came to rest about eight meters down into the crevasse. We successfully arrested the fall.

Kendall was on a small ledge, his left ankle and right shoulder hurt, and he had lost his ax. I told him we had the rope well secured and he had recovered his ax. He then got into his prusiks, but the result was that his weight was taken off his crampons and, because the crevasse lip was overhung, he swung out toward the center. The rope then cut further into the lip, dropping him down below his ledge. He prusiked back up to regain the ledge. Kendall confessed to being quite frightened, and I offered assurances that he was well anchored and that we would soon have him safely out.

Kendall went in at 1115. It was now past 1130. I had expected the lead rope team to miss us and return. For some reason, I was convinced they would not be able to hear us. (They were out of sight.) When I finally called, however, they answered immediately and were back within ten minutes. By the time the other team returned, I had worked out a rescue scenario. The far side of the crevasse had a slope of about 60 degrees and looked climbable. Kendall said he thought he could climb out with an ax and a belay. So when the other rope returned, they went to the lower lip of the crevasse, where basic Dan Wilder set up a sitting hip belay.

Rope leader Jay Matsen secured himself to the center of the rope and untied himself from the end. He lowered his ax to Kendall, and Kendall tied himself to the end of the rope. He climbed out under his own power with a snug belay from Wilder.

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Matsen is currently enrolled in an EMT course, so he took over the first aid and examination. There were no obvious breaks; at the very least, however, Kendall was somewhat disabled by a badly sprained ankle and shoulder. Matsen iced the ankle. We ate lunch and waited to see how mobile Kendall would be.

David Kendall has run over 40 marathons in his life. He is strong and extraordinarily determined. After removing the ice and replacing his plastic boots, he found he could limp with pain, but was mobile. He announced that he was not about to spend a forced bivouac on the glacier, and would try for base camp. There followed a slow, agonizing five hour retreat. The route is complex, involving ups and downs over glacier, snow, talus, and heather. The party did what we could to help, taking his pack, giving him two long axes to use traversing the talus, and headed for the easiest terrain and camp.

I feel compelled to add a summary comment about the value of training offered in the Mountaineers climbing courses. Given that the unfortunate accident happened at all, the ensuing actions by all the party could hardly have gone better. The initial arrest, the stabilization of the situation, extrication from the crevasse, the first aid, the TLC extended by everyone involved, the group cohesion, and in general the calm and workmanlike manner in which the party acted are a tribute to the calibre of the people involved, but no less also to the quality of training given its students by the Mountaineers. (Source: From a report by Cebe Wallace, Leader of this climb)

FALL ON ROCK, PROTECTION PULLED OUT

Wisconsin, Devil's Lake State Park

On April 1, 1988, Mark Gable (21) suffered lacerations and abrasions when he fell six meters from a climb on the South Face of East Bluff near the Devil's Doorway. Other climbers said that he had fallen nearly three meters minutes before, but continued climbing. (Source: Devil's Lake State Park)

LOSS OF CONTROL-RAPPEL, NO HARD HAT

Wisconsin, Devil's Lake State Park

On August 2, 1988, Alma Guerro (13) received a puncture wound to the back of her head when she swung unintentionally on a rappel from East Bluff. (Source: Devil's Lake State Park)

Analysis

The victim was wearing a helmet, but it was not firmly attached, and the injured area would normally have been covered. A helmet with no chin strap attached is no helmet at all, unless you're real lucky. (Source: J. Williamson)

FALLING ROCK, DISLODGED ON RAPPEL

Wisconsin, Devil's Lake State Park

On September 14, 1988, Kelly Hill (20) fractured his ankle when he dislodged a rock while rappelling from West Bluff. (Source: Devil's Lake State Park)