Giguere and Shank, along with Wickwire's team, were also flown off the mountain too.

**Analysis**

Disappointment Cleaver is the most popular route on the mountain. It subjects climbers to sustained periods of rock and icefall hazards at varying locations. Teams that move quickly and safely limit their time in these areas. Hommer's team got an alpine start and was moving at a reasonable pace. Sadly, rockfall is common on Disappointment Cleaver, especially late in the year.

Colder conditions may reduce the rockfall hazards. It seems, however, as though there is always some amount of rockfall and/or icefall hazard on Mount Rainier, making it possible for experienced teams like Hommer's to be in the wrong place at the wrong time.

Hommer was not wearing a helmet at the time of the accident. It is believed that a helmet wouldn't have made a difference however. Though a helmet may not have made a difference in Hommer's case, the National Park Service strongly recommends that all climbers wear helmets when ascending Mount Rainier. (Source: Mike Gauthier, Climbing Ranger)
enced natural-gear leaders are able to get solid protection at or near the same place Kropp’s cam pulled.

Subsequent studies of the broken carabiner revealed that the wire gate was not distressed; in other words, the carabiner appears to have failed because its gate was open. While a gate-closed carabiner failure is rare, carabiners with their gates open lose as much as two thirds of their strength, making failure in a fall a real possibility.

What caused the carabiner gate to open? It could have become wedged or constricted inside the crack because its short quickdraw would not let it lie outside the crack. Jammed in the crack, the carabiner could have had its gate pinned open. The short, stiff quickdraw could also have let the carabiner rotate into a cross-loading orientation, another extremely weak position.

Leading Air Guitar pushed Kropp’s crack climbing abilities that day. Air Guitar, and other 5.10a basalt column cracks like it, are steep and require technical crack-climbing skills. Mastering good crack-climbing skills takes extensive practice and training, which Kropp did not have.

Air Guitar also requires the precise placement of natural protection. Learning how to size and place rock protection properly before attempting routes with hazardous fall exposure is important. Short quickdraws are best suited for sport climbing. When using natural protection, many climbers prefer slightly longer and more flexible quickdraws or slings, which provide for smoother rope movement and decrease the chance of protection being displaced.

Get in the habit of placing two pieces of protection just below crux moves, and anywhere your protection is suspect, place two or more pieces. Doubling up gives you an extra measure of safety in the event one piece fails in a fall. Also, when you place gear in a crack, be sure its quickdraw or sling is long enough to let the rope-end track outside of the crack. This will help keep the carabiner from getting wedged in the crack. (Source: Mike Gauthier—Climbing Ranger, Mount Rainier NP, Duane Raleigh—Group Publisher at Rock and Ice, and Jed Williamson)

**FALL ON ROCK, INADEQUATE PROTECTION, POOR POSITION—BAD FOOT PLACEMENT FOR SETTING PRO**

**Washington, Mount Erie, Snag Buttress**

I am a climber of about three years, much of that indoors. On October 26, my friend Mark, a very experienced climber, was teaching me how to set protection. I had led many outdoor sport routes but, I had never set my own protection before. We were both wearing helmets. Mark led the first 40 feet of ZigZag (5.7) route, carefully placing protection. He then tied off and put me on belay from above. I followed and cleaned while trying to observe how he had placed the protection. The brief climb was fairly easy, the hardest part was pulling the chocks out of the crack. We both came back down and then it was my turn to set pro on the same route. I was very