

have been on a belay, but this is not a normal practice when cleaning with Jumars in Yosemite. Had he not been tied, this would have been a much more severe accident.

*California, Yosemite National Park.* On 20 August Ronald Guest (21), Pierre Zetterberg (21), and Tom Rack (21) decided to climb a seemingly moderate wall between Murphy Dome and Fairview Dome near Tenaya Lake. There were no pre-established routes on this section of rock and they were merely going to do an easy 4th and 5th class ascent. The party had very little experience including Mr. Guest. As they climbed up, the difficulty went from 3rd to 4th to 5th class and consistently became more difficult. The party reached a 6 foot by 20 foot ledge 300 feet up from the base and Guest started a difficult 5th class lead. He climbed about 20 feet above the ledge and it became too difficult for him. He then placed a piton, clipped in an aid sling, and stood on it with the thought of passing the difficult part by the use of aid. The piton pulled out and he fell backwards onto his head and downwards to the ledge below him where he lost consciousness. Rack was able to apply artificial respiration and basic first aid while Zetterberg descended 3rd and 4th class ledges East of the route and summoned help. Mr. Guest had never used or practised aid climbing before.

*Source:* Steve Hickman, Yosemite National Park.

*Analysis:* There are many ways the accident could have been avoided. The party should have been wearing hard hats. When the route became apparently too difficult for them, which was obvious at the 6 foot by 20 foot ledge, they should have given up the climb. Extra caution should have been exercised realizing that the route they were on had never been climbed and that the group was made up of beginners. Protection should have been placed sooner than 20 feet off the ledge or the aid piton should have been placed for protection rather than aid. A greater knowledge of piton placement should have been known.

*California, Yosemite National Park.* On 14 October Jim Madsen (20) and four others went to the top of El Capitan to go to the aid of two climbers who had been on the Dihedral Wall since 9 October. The weather had been rainy and cold and Madsen and other climbers were concerned that they might be in trouble, although they had made some slow progress. The climbers were at the 6,500 foot level and soaked. Temperature was falling.

Madsen and Price planned to rappel down from the summit to Thanksgiving Ledge and try to communicate with the climbers, and see if they needed any help. Madsen had climbed the wall and knew the route. This would require a rappel of some 600 feet. Belay was, therefore, impractical. At 7:00 a.m. on the 15th, they started to look for a rappel point. Madsen found a ledge quite close to where they had camped that night on the top. It was down another 30 feet, with a pine tree three feet in diameter about six feet from a steep wall that dropped straight down to Thanksgiving Ledge. This spot saved one rappel as it was 150 feet lower

than the end of the route. It had been decided that Madsen would take five ropes, two pairs of Jumars, carabiners and pitons for the anchors, a radio for communication, and two thermoses of hot soup. Price would follow with extra equipment, clothing, etc., if the climbers needed it. Madsen had a heavy load—estimated at about 45 pounds. Madsen tied a knot in the end of the rope but it was not noticed what it was at the time. After tying the knot, Madsen threw the rope over and lowered it down. He used a 2,2 and 2 carabiner brake system with either ski hut or Chouinard carabiners and was tied into the tree with an 11 mm Mamout rope.

Madsen then loaded himself with the equipment; Price wished him luck and he started his rappel at about 7:50 a.m. As he rappelled down, he somehow lost his rappel and slipped off the rope and fell to his death.

Somewhat later voice contact was made with the climbers, who stated they would finish the climb under their own power and that they were all right.

When the rope that Madsen had used for his rappel was pulled up, it was noted that only a single overhand knot had been tied in its end and that the knot was very tight and had been compressed to a very small size. It was presumed that the small overhand knot had slipped through the carabiner brake system when Madsen reached the end of his rappel. He had a Jumar handle on his sling to use as a safety attachment to the rope at the end of his rappel, but this was later found to be still on his sling when his body was recovered. He may not have had time to put it on if the knot slipped through as soon as he reached it on his rappel.

*Source:* Robert Pederson and Steve Hickman, Yosemite National Park; Lloyd Price and Tim Kimbrough.

*Analysis: Madsen:* Jim Madsen should have thought out his rappel procedure more clearly. The basic failure of his rappel was due to only tying an overhand knot in the end of his rope which was far from being sufficient. If he had tied a much larger knot or put a carabiner in the knot, the accident could have been prevented. He also could have placed the Jumar on the rope and secured it to himself before he made his rappel or planned to be on a belay.

*Rescue Party:* The party in general made several errors. Madsen started the relief effort going because of his concern for the climbers on the route. He was the only one in the party who knew the terrain quite well at the top of the route or had done the route. He was the one who had volunteered to rappel down to Thanksgiving Ledge and he was the best climber in the party. From these factors he gained a psychological advantage and the party put too much dependence upon him. Choosing a party leader was never discussed and one was never picked. Madsen's feelings and ideas about going up were questioned but once the operation started, Madsen made almost all the decisions. He was the youngest in the party and should have been more cautiously checked on all of his decisions. He did not feel that a belay was necessary but a critical view would have shown that one was, or at least had him apply the Jumar. Although he was one of the best climbers in the world, he should have been checked on every detail of his rappel considering that there was an unusual amount

of stress upon him and that he may have been acting more hastily than normal.

*California, Yosemite National Park.* On 27 October Warren Harding (44) and Galen Rowell (28) began an ascent on the unclimbed South Face of Half Dome. It was late in the year, but the weather looked good for the future and they both had equipment in the experimental stages, namely a single suspension bivouac hammock and shelter which would feasibly protect them from the weather in case a storm did break. They also had a small C B transceiver and were making periodic calls to their support party led by Glen Denny.

The weather held good for about six days and then a storm rolled in. It rained 0.09 inches on Friday, November 1st and 1.68 inches on Saturday, November 2nd. The snow line dropped to 7,000 feet while they were at the 8,000 feet level or about 2/3 of the way up the climb. Glen Denny received a radio transmission that afternoon that was broken and he only understood them to say that one of Rowell's feet was in bad shape and it was too dangerous for them to rappel down. Lloyd Price, one of the support party, called the Ranger's Office that afternoon and requested a Park Service Radio, head-lamps, and a hailer because the Half Dome party was possibly in trouble. Denny, Sylvester, and Price were going to Little Yosemite Valley where they would be able to get better radio reception with the climbers, see them and their situation, and find out for sure whether they were in trouble and if they needed any assistance. The Park Service loaned them the equipment and they were on their way the next morning at 7:00 a.m.

At 11:00 a.m. the same morning the Park Service received a call on the radio from Price. He stated that the climbers were in trouble and did need a rescue. Their new equipment had failed to keep them dry and they were soaked to the bone. They tried to rappel off the route but the ropes were frozen and it was too dangerous.

Rowell tried to rappel off the route but on his first rappel he descended about 80 feet and when he tried to traverse into a bolt ladder on the route, he could get no traction because of ice on the wall. When he would pendulum over, trying to get to the bolts, his feet would slip some distance short of the bolts. He made no progress and finally gave up. The party had taken only Jumar ascenders and when he tried to Jumar back up the rope he found that it was frozen. It took him two and one half hours to Jumar back up the 80 feet.

They both had started to become frostbitten and didn't think they could spend another night on the wall without freezing to death. More technical information was received from Price and it was decided that a rescue effort be started. This was effected from the top by Yosemite Park Rescue Group. Royal Robbins was involved in belay to the climbers who were jumared to the top followed by Robbins.

*Source:* Robert Pederson, Yosemite National Park.

*Analysis:* The primary factor leading to the accident is that Harding and Rowell were not sufficiently prepared for bad weather. It seemed likely, being on a Yosemite wall for 11 days, in November, that they