spasms in the injured muscles. Kurth was able to slip on a warm jacket and with the food and water they'd brought they were as comfortable as could be expected.

In the morning the NPS tried reaching them directly by helicopter. The wall was too steep to clear the rotor blades, so rescuers heli-rappelled to a ledge two pitches above. They reached Kurth at about 11:00 a.m. and raised him, supported by one rescuer and with his neck and back immobilized. Morphine made a little difference, but not much, and all the way up Kurth had to hold up his splinted arm while fighting the pain and the confines of the chimney.

Kurth was finally short-hauled under the helicopter down to the Valley at 4:00 p.m., then flown to Doctors Medical Center in Modesto. He was found to have a fractured humerus and a dislocation of the left shoulder. The shoulder was not reduced until midnight, almost 36 hours after the accident. Despite being bashed by the rock, his head and neck turned out okay, but there is a very good chance he would have been killed without his helmet.

Analysis

Other than the obvious—Yosemite rock is often loose, and repeated warnings to the second are always a good idea—what can we say? Kurth is one very tough—and lucky—guy! (Source: John Dill—NPS Ranger, Yosemite National Park)

FALLING ROCK—FALL ON ROCK, FAILED TO FOLLOW INSTINCTS

California, Yosemite Valley, Lost Brother

On September 29, I set out with Christian Dragheim and Chris Kerr, fellow members of the Cragmont Climbing Club, to explore the Lost Brother, a seldom-visited formation on the south side of Yosemite Valley between Sentinel Rock and the Cathedral Rocks. We hoped to locate the second pitch of the 5.6 first ascent route taken by David Brower, Ruben Schneider, and Morgan Harris in 1941. Christian, Sam Tabachnik, and Christian's friend Sean and I had explored the route the previous spring but had not found the second pitch, ascending instead a strenuous 5.9 corner and lieback system, after which we retreated. I later called Morgan Harris, the only surviving member of the first ascent team, who lived in Berkeley, to ask him to describe the route. He told me in a high, quavering voice that they had climbed a series of chimneys after the first pitch. The Sierra Club Bulletin for 1941 offered a few more details, but not much. Since Morgan was well on in years, I wanted to bring him a photographic record of the climb on our return. I particularly wanted to show him that we didn't have to use a shoulder stand to get through the bulging overhang on the first pitch, as he and Brower had done sixty years ago!

The cliff band, which the second pitch ascends, appeared to have three or four chimney systems fairly close together, so we decided to try the one furthest to the left and then explore the others as time permitted. I took the lead, heading up a ramping gully to the base of the first of what ap-

peared to be a series of chimneys separated by easier sections. I climbed through two short chimney sections and noted a fair amount of loose rock. Shortly after Christian called out the half-rope mark, I called down to suggest that he untie from the belay anchor so that he would be free to take shelter from falling rock. It occurred to me to suggest that he and Chris move off the belay ledge altogether, but for some reason I did not.

At the top of the second chimney section, the chimney flared, and I began stemming. I saw that I would have to step on a large detached block, perhaps half the size of a refrigerator, and I butted it with the heel of my hand to test it for stability. It seemed okay, and I moved up, putting my left foot on top of the block after securing a good fist jam with my right hand. As I weighted the rock, it tipped over and fell, and I had a flash of terror as I flailed in space with my feet, trying to stay above the collapsing block and the cascade of rubble spilling out behind it. I was very fearful both for myself and for Christian and Chris below. The next thing I remember was sliding headfirst down the chimney/gully, nothing in my vision but the dust, leaves, and sticks immediately in front of my face. I remember jolting down over the rock, waiting for the rope to pull me tight, and wondering why it was taking so long. Then I felt the rope catch, and I found myself just a few feet above the belay ledge, with one of the two ropes cinched tight around my right thigh and my breath coming in short, painful, moaning gasps. I croaked, "Slack, slack," to get Christian to relieve the pressure of the rope on my leg. Still tucked under cover to avoid the cascade of rocks, Christian was incredulous at hearing my voice just a few feet away. Looking up, he saw me hanging above the belay.

He couldn't get any slack out of the rope, however, and didn't want to pull it because it was caught up in a tangle of loose rock above. He also couldn't undo the knot on my harness because it was under the tension of my weight. Chris asked if he had a knife and Christian told her to dig his Swiss knife out of his pack while he clipped me in to an anchor. She handed it to him and he cut the rope at my harness, finally allowing me to slide to the ground while he helped me down. The ledge was narrow, so Christian had some trouble controlling me as they lowered me. I asked him to take off the gear rack, which was gagging me, and the huge cams on the back of my harness, which were digging into my back, and then he and Chris tried to make me as comfortable as possible, obviously very concerned by the pain I was in. There was almost no place for me to stretch out, and they finally managed to squeeze me in behind a small tree after bending the branches back. I realized the pain I was experiencing was from broken ribs and could feel the bone ends grinding together in my back when I moved or when my back muscles went into spasm, which occurred every so often. I tried lying down but found that I was only comfortable sitting up. I also had a slight but sharp pain in my left hip and figured I probably had a hairline fracture there as well.

The fall had ripped off the low-cut climbing shoe on my right foot, which was badly scraped and bleeding. The left foot didn't look much bet-

ter. I asked Chris to get my hiking boots and socks, which I had left at the belay, and put them on my feet. I then noticed that the back of my right hand was pretty well shredded and the skin on many of my finger tips on both hands was scraped off, and a little flap of skin was sticking out on my cheek. While a lot of things were oozing, nothing was really bleeding badly, however. My helmet was still on, and Christian said it had no big gouges or scrapes on it. As I started to get my breath and the pain subsided somewhat, I realized that I was going to be ok, and that I was very lucky. The broken ribs made it very painful to move, so Chris and Christian made me as comfortable as they could, then wrapped me in the mylar space blanket I always carry in my epic kit. I had never been in one before, and it was surprisingly warm. I also asked Chris to get my wool balaclava and nylon windbreaker out of my pack and put them on me and then put my helmet back on. I have always considered these two pieces of gear to be well worth carrying for emergencies, and they proved it on this occasion.

Christian gave Chris his first aid kit, which had some codeine pills in it, one of which Chris later gave me. Christian then discussed how he planned to get down, saying that he would rap the route. I gave him my car keys and emergency whistle and asked him to blow it when he got down to the road, so we would know he had gotten that far, although we never did hear it. As he left, I was suddenly very grateful to have two climbing partners.

Christian cut off as much of the rope as he could get and started the descent scramble. After going a short distance, he decided that the descent we had taken the previous spring would be faster, so he traversed over to a fixed rope that some other climbers had rigged for getting up to a project. Finding a second rope there, he borrowed that to rig to the belay tree, since the portion that he had cut off my rope was too short. When he reached the road less than an hour later, he flagged down a group of passing motorcyclists and asked to use a cell phone. Dialing 911, he was put through to the Highway Patrol, which put him on hold for five minutes. Finally, he was put through to the Yosemite duty ranger and asked for a rescue.

Meanwhile, Chris and I sat and watched as low clouds moved into the Valley, obscuring the upper half of El Cap. Anxious and not enjoying my own thoughts, I asked her to talk to me about her life, and she did, describing the ups and downs of her work and home life. It was a relief to be thinking about somebody else's life at that point! We sat there for about three and a half hours while the clouds continued to move in, always remaining above us fortunately, for I was sure if they lowered we would be shrouded in freezing mist. Scattered raindrops "fwapped" on the mylar space blanket, but we were lucky in missing the pelting downpour that hit the upper valley. Occasionally, Chris fed me bits of food and held the water jug to my lips while I sipped. I found that my right arm was pretty much immobile because of the pain in my ribs, although my left arm worked fine.

I discovered that my Lexan water jug, which I carry on my harness, had been ripped off in the fall and the lid had completely disappeared. My camera, which was in a carrying case clipped to my harness, had also disap-

peared. The gear loop on my harness where it had hung was ripped open. Chris also showed me one of my carabiners she had found on the belay ledge. It was a wire gate with a deep gouge in the metal of the spine. The gate was crushed and twisted and lay immobile against the outside of the gate head. How it had opened and closed again, with the wire gate ending up outside, was a mystery.

I had taken the fall at about 1:15 p.m. and Christian had left at 1:40 p.m. From about 3:00 p.m. on, we watched the road anxiously, looking for cars parking along the pavement. A few showed up, and we figured they had to be members of the valley search and rescue team. About 5:15 we heard voices, and members of the team began to appear. The first one I saw was tall, skinny, and wore a tattered cap, and I somehow knew he had to be the redoubtable Werner Braun, although I had never met him before. When he ignored my greeting I was perplexed at first, then recalled he was very hard of hearing. He secured the remaining rope with a clove hitch, and then I heard him up behind me drilling a bolt for a lowering anchor.

Keith, the EMT, bent over me and asked me a bunch of questions, took my pulse and shined a little light into my eyes. The team members managed to get me into a litter and then, with a rope rigged through the bolt as a brake, began to carry me down the slabs at the belay to the steep sandy slope about 50 yards below. This involved much slipping, cursing, and tipping of the litter, which I found painful and alarming, and at one point a loose rock rolled down and crunched into the top of the litter and my helmet, which I was glad I had kept on. They finally found a spot where they could brace the foot of the litter against some rocks, reducing the angle at which I lay.

(The decision was made not to pick Paul up until the following morning, as his injuries were not severe and the park's contract helicopter was not available.)

In the morning, Mike made me a hot chicken stew, which I slurped with relish, and then the radio came to life. More members of the search and rescue team showed up, and they began to prepare me to be helicoptered out. While I had my misgivings about this, I realized there was really no other choice. When I mentioned my concerns to Keith, he said that the Braille Book incident had involved a military helicopter and reassured me that the park's contract helicopter pilot was excellent, and that I had nothing to worry about. Shortly thereafter we heard the distant "whop" of rotors, and I saw the helicopter fly up the valley. This was an image I had seen several times before, always wondering what had happened to some poor bastard. Now it was coming to get me—something I had never considered a possibility. As the helicopter approached El Cap, the pilot's voice came over the radio, perfectly calm and very precise, announcing his arrival. His voice gave me an immense sense of relief. The helicopter swept up to us, hovered a moment while the pilot examined the site, and then descended to El Cap meadow to wait for the team to get me ready to move.

The team then prepared me for the lift, securing my neck and head with a plastic collar, strapping me in the litter with webbing, and attaching the lift webbing to the frame of the litter. They then began to carry me another 50 yards to an open area away from the trees. This last carry, with my head downhill and the team again slipping and cursing, erased any final doubts I had about the necessity of the helicopter extraction.

The team put a sleeping bag over me to keep me warm in the cold downdraft of the rotors. They then called the helicopter, which I could hear approaching. When it got close, a team member put a shirt over my face to protect me from the sticks and dirt swept up by the downdraft. I heard them secure the webbing to the line from the helicopter and then felt the litter lift off the ground. As I began to rise, somebody took off the shirt, and I looked up and saw that I was suspended from a single 3/4-inch nylon rope hanging from the bottom of the helicopter. The co-pilot was looking down at me and talking into his helmet microphone to the pilot. Then the helicopter rose up slowly and I began to spin slightly. I could see El Cap, Sentinel, and the Cathedrals swirling by out of my peripheral vision. It occurred to me that it was probably just as well that I could not see down, or even out to the side very much. With infinite care, the pilot began to move off laterally and then to drop slightly. I realized he was taking care to minimize the amount of swing and even the amount of spin I experienced, although I did start to spin quit a bit. In a few minutes I could see trees in my peripheral vision and knew we were close to landing in El Cap meadows. A moment later, I heard voices and felt hands on the litter, and then my vision was filled with a ring of heads in firemen's helmets. At that moment, I felt a tremendous sense of release and was briefly overcome with emotion, fighting back a gush of hot tears that I didn't want the firefighters to see. I heard them unclip the line to the helicopter, and then they began loading me into the fire truck/ambulance. I was particularly touched by the kind manner of one woman firefighter, who seemed to be the crew boss, and who took particular care to speak to me as I was being loaded in the ambulance. She also rode with me to the clinic.

I felt the truck move off and trundle around the valley, eventually arriving at the Yosemite clinic. There the medical staff swarmed over me, taking off my harness and helmet, and getting me ready for x-rays. The clinic's doctor told me that they were concerned that I may have punctured a lung, and that they had seen what might have been an air pocket under the skin on my neck. As a consequence, he explained, they did not think it wise to send me to the hospital in Modesto by ambulance and had instead ordered a medical helicopter to fly me there. After the x-rays had been examined, I was put back in the ambulance and driven out to Ahwahnee Meadow, where a second helicopter was waiting. The EMT for the helicopter, a heavy-set older man, explained to me that during the flight, he would sit over me with a needle in his hand. If at any time it appeared that my lung was punctured and leaking air into my abdominal cavity, he would plunge the

needle into my chest to let the air out and reinflate my lung. He said that it would be very painful. Fortunately, this wasn't necessary.

The second flight lasted about twenty minutes. I was wheeled out of the helicopter into an emergency room swarming with medical specialists of all types, wearing shower caps and baggies on their feet, who looked at me with extremely keen interest and anticipation. When my injuries were explained to them, most began to drift away in little groups. Two doctors came up to me and explained that they would need further x-rays and a CAT scan of my hip, which were taken with great efficiency. The orthopedist explained that I had a hairline fracture around the base of the ball at the head of the femur, and that he would reinforce this with three stainless steel screws. This operation occurred the next day while I was under general anesthesia. I spent the remainder of the week in the hospital. At the end of the week, friends brought me and my car home, and I began the process of learning for the second time in my life how to walk on crutches. Now, three weeks after the fall, I am just beginning to get around a bit without the crutches. The many scrapes have almost completely healed, and the huge purple welt over my right kidney has shrunk to a fraction its original size. I still have to sleep sitting up, but I have gotten used to that. Doctors say the ribs will heal in another three months or so, and that I should be able to start skiing in February. I expect to be back on the rock in the spring.

Analysis

In the last few years, I have become increasingly interested in first ascents and exploratory climbs of moderate difficulty. One consistent feature of this type of climbing is the presence of loose rock. While I have always had a tremendous respect for its dangers, and have had a few close brushes with rocks that others have knocked down on me or I on others, I had never before experienced anything as dangerous or as terrifying as the collapse of the big block I stepped on here. It was about half the size of a refrigerator, and seeing this rotate out from under my foot was horrifying. The block, and the cascade of smaller rocks its fall released, left a swath of destruction in the manzanita below and a pox of white impact scars on the ledges around the belay. Club members climbing on the other side of the valley heard the block crash down the slope. It could easily have killed me and both my partners, although Christian took shelter in a safe location after I suggested he do so. I had tapped the rock and thought it looked and sounded solid. I also thought it was big enough that my weight would not be enough to shift it. Obviously, I was wrong on both counts. If I continue climbing these exploratory types of routes, I will need to take an even more cautious approach to the dangers of loose rock, particularly the danger to the lower belayer. I will also be more likely to clip my double ropes separately, so that falling rock is less likely to sever them both at a single point, as nearly happened here.

The big question is, how could I have fallen 100 feet or more? I have been climbing traditional routes for almost 20 years, I carry a rack with double sets of stoppers and cams, I'm 56 and have the caution of those no

longer young, and I know how to place gear. Unfortunately, I simply don't recall my gear placements on the climb, and no one has been back to the upper part of the climb to examine it (although Christian did go back and retrieve gear and ropes from the lower part of the climb). So I do not have a good analysis of why I fell so far. Christian was belaying me, and he said that he never let go of the rope, and in fact barely felt anything when the rope finally caught me, which is not surprising, given the amount of rope out when I fell.

I do have some ideas, however. I was climbing in chimneys that offered few gear placements and that were linked by easy ledges where I felt little need to place gear, so I did not have many pieces in. I had also picked up some rope drag about mid-rope and wanted to avoid putting in gear that would make the rope drag worse. I recall one placement that consisted merely of a sling girth hitched to a manzanita bush, the main purpose of which was to keep the rope running smoothly, away from a notched chockstone where the rope would otherwise have gotten stuck. I also girth- hitched an old but solid-looking oak stump about six inches thick. This stump, with my webbing still wrapped around it, ended up at the belay. I suspect the falling block smashed into it and ripped it out, since the top of it was broken, and the carabiner on the sling around the stump had a rough gouge in it.

And then there is the destroyed carabiner. One possibility is that this carabiner was attached to my highest piece, which is still in place, and that the block hit this as it fell. This might explain the gouges in the carabiner and in the sheaths of both of my 9mm Edelweiss Stratos ropes, which I had clipped together through my protection. The twisted, open, and dead gate may have been caused by the rope cross-loading the gate as I fell.

I also wonder if the block did not hit the first piece and snag the rope, jerking me out of the jam crack and into the air and clear of the rock like a trout yanked out of a stream. The sudden acceleration this would cause might explain why I have no memory of the start of the fall and why I did not fall into the chimney into which the rest of the loose rock was cascading. It might also explain the shredded back of my right hand, which was in a jam crack, and my wrenched right shoulder. Unfortunately, since my belayers were busy taking cover, and I was momentarily indisposed, no one will ever know how my fall path somehow kept me out of the chimneys and off the ledges I had climbed up.

I have also reflected on the injuries I received—and the ones I did not. My helmet had two small sharp gouges in it that could have been severe cuts if I had not been wearing it. The five broken ribs, the huge purple bruise over my right kidney, and the arching scrape mark on my back are almost certainly the result of my falling on the huge #5 and #6 Camalots I was carrying on the back of my harness for use in the chimneys. I am not sure how I could have avoided carrying them this way, but rest assured I will be thinking about it the next time I have occasion to carry them. Both my ankles were shredded because I was wearing low-cut shoes, and the right shoe was ripped off altogether in the fall. I wear low-cuts not by

preference, but because it is almost impossible to find a decent pair of high top climbing shoes, the few available inevitably being low-end shoes designed for beginners. When are those bastards going to make a decent high-top? My right shin was severely barked due to the open, straight leg cotton pants I was wearing, which pulled up during the fall. If I had been wearing technical climbing pants with a tight zippered calf, as I do in cooler weather, I would probably still have the skin on my shins. The back of my right hand, which had been in a jam crack when I fell, was shredded and bleeding. Taping for the climb would have solved that problem.

One piece of gear I often worry about being injured by is my large Leeper cleaning tool. I used to carry this on a lightweight 'biner on my harness, with a cord for extension when in use. I became concerned, however, that this arrangement was too rigid, and could result in the tool puncturing my abdomen in a fall. Now I carry this on my harness hanging from a long enough piece of cord that it can move around freely in a fall. It caused no problems in this fall, although one end of the gear loop it was clipped into ripped out of the harness.

When I stopped falling, one of the two ropes was wrapped around my thigh, squeezing it painfully. Fortunately, Christian was able to cut the rope at the harness, releasing the pressure. If I had been hanging alone on a wall, well above the belay, this problem might not have been worked out so easily. I carry a tiny knife on my harness for cutting old webbing out of bolts, and I could have used this, but I was in so much pain and had so much trouble moving that it might have taken a long time to do the job, and if I was on a vertical wall, I would have needed to stay tied in anyway. I can only say that the outcome of this one was mighty lucky.

I also wondered if I wasn't lucky to have fallen all the way to the belay. If I had taken a shorter fall, but with the same injuries, my partners would have had to climb up to me and try to get me down. Just the climbing up part could have been problematic. As I climbed the second chimney, I realized that my partners would probably find it very difficult to follow, even with a tight top-rope. If I had been injured and helpless above this chimney, particularly with worse injuries than I had, the experience could have become a very long and very unpleasant ordeal. While I only climb at a moderate level myself, it is not unusual for me to climb with partners who have difficulty following what I lead, and who would be hard pressed to get up to me if I were injured without a very well managed tight line. This has also been a sobering realization.

I was glad to have two partners, and this was not an accident. Increasingly, I climb in groups of three or four, in part because I enjoy the socializing, in part because I appreciate the greater security of larger parties, particularly for more remote, exploratory climbs. I routinely climb with two 9mm Edelweiss Stratos ropes, using the Petzl Reverso, a self-locking belay device that allows a leader to safely belay two followers simultaneously on two ropes. Using the Reverso allows a party of three to climb almost as fast as a party of two, at least on moderate terrain.

I like to believe that accidents aren't really accidental, and I believe that is true here. Some part of me didn't want to climb that weekend, and when I didn't listen, it found a way to get my attention. I was tired from a long week of work, and I wanted to stay home, rest up, work on the house, and socialize in town. I was also coming to believe that exploring the possibility of a new relationship might be a lot more of an adventure than exploring another rock climbing route. But I had made a commitment to my partners to go, and although I knew they wouldn't really mind if I didn't, I felt I had given my word and was duty-bound to carry through. And when we got up on the Lost Brother, some part of me was not really enthusiastic about exploring those ugly-looking chimneys. It was an idea we had, but I felt little joy at the prospect as I led out. In short, I wasn't psyched to climb, and that is a vulnerable state to be in when leading.

In the end, I paid a price for not honoring my own spirit. The consequences were harsh, but far less so than they could have been. I consider myself the luckiest unlucky guy in the world. (Source: Paul Minault)
(Editor's Note: Paul Minault's analysis covers a lot of ground, and as a result, fewer narratives on California are included this year. We thank Paul, one of the pioneers for The Access Fund, for his contribution.)

FALL ON ROCK, INADEQUATE PROTECTION, INADEQUATE CLOTHING AND EQUIPMENT, WEATHER

California, Yosemite Valley, El Capitan

At 4 a.m. on September 30, I (Tom Randall—22) started up Eagle's Way, VI 5.8 A3, on El Cap, in an attempt to break the solo record. I had checked the weather with the rangers at the Wilderness Center and was given, "...sunny for the next two days," (ample time for me to do the route) and received the same from a telephone weather line two hours before I started.

I climbed straight through the day and was cleaning pitch 11 after dark that evening when my headlamp battery ran out. I had a brand new spare with me, which turned out to be a total dud and gave out after half an hour on pitch 12. No big problem. I just lowered off to the belay and settled down for a night in my comfy harness—but it did put me ten hours behind.

The next morning, I finished leading pitch 12 and got all racked up for 13. I was belaying with a Grigri connected to the belay loop on my seat harness by a brand new DMM Belay Master locking carabiner. To back up the Grigri I periodically tied a knot in the free side of the rope and clipped it to my harness, leaving several feet of slack between the knot and the Grigri so that I could do a few moves.

The pitch went bolt (which I back-cleaned), rivet (to which I attached a big, beefy, hanger), copperhead (back-cleaned), RURP (back-cleaned), RURP (back-cleaned), copperhead. I was on the copperhead and had just taken my adjustable daisy from the RURP and was reaching up to the next placement when, "PING!" the copperhead pulled.

I fell 20 feet back to the rivet, the hanger broke, and I continued directly onto the belay—factor 2! The rope came tight on my Grigri, but then the