evaluate our accident so that we can learn from it as best possible. We count ourselves as very lucky, but also have endeavored to stack the odds in our favor. The hard work, efforts, and risks taken by those that assisted us can never be understated. (Source Johanna Hingle, 28, from a posting on Mountainproject.com)

RAPPEL RIGGING ERROR – FALL ON ROCK, DISTRACTION
California, Yosemite Valley, Serenity Crack

On May 7, Brian Ellis (31) and Japhy Dhungana (25), his frequent climbing partner of several years, climbed Serenity Crack (three pitches, 5.10d) and Sons of Yesterday (five pitches, 5.10a), which starts at the top of Serenity. They began rappelling the routes using the Reepschnur method shown in the illustration, page 25. The climbing rope is passed through one or more rappel rings and knotted to a thin "retrieval" cord. The rappeller descends the single rope, supported by the knot jammed against the rings, while leaving the cord unloaded. In case the knot slips through the rings, a figure-of-eight loop is tied in the cord just below the rings and clipped to the rope on the rappeller's side of the rings with a locking carabiner, thus securing the system. After the rappel, the rope is retrieved by pulling the cord. Advantages of this method include the ability to use single-rope descent devices and the reduced weight of the second rope for full-length rappels.

Ellis used the Reepschnur method because he favored rappelling with his Trango Cinch, an auto-locking, single-rope belay device. He typically joined the rope and cord with a flat overhand bend—in which the rope ends point in the same direction—backed up by a secondary overhand. (Again, see illustration.) Usually Ellis would go first, and then Dhungana would rappel with both the rope and the cord rigged through his ATC. Since he was no longer dependent on the security of the knot-jam, Dhungana would first disconnect the carabiner and untie the figure-of-eight loop to minimize the risk of the rope hanging up when they retrieved it. On this they were using a 10.2-mm rope and a 6-mm cord.

At the top of pitch 3 of Serenity Crack, Ellis rigged the next rappel through two rappel rings while Dhungana organized the 6-mm cord and chatted with a climber leading the pitch below. Dhungana checked Ellis's rigging and then Ellis rappelled, carrying a bundle of the cord in his hand to keep it from tangling. After 20–30 feet, he stopped to photograph the climber as he led the crux section. He stayed there for about ten minutes, moved left and right for different photo angles, and then resumed his descent. Almost immediately he began to fall. Dhungana described it in an Internet post, "This is when I heard a pop and the sound of the rope whizzing. I tried to grab the [cord] with my bare hands and held on tightly as long as I could. My instinct even tried to wrap it around my waist for an

emergency brake, but the [cord] just burned through my hand." The cord tangled and then jammed at the ring and the impact broke the cord. Ellis fell 300–400 feet to the ground. Dhungana called 911 and a medical team arrived within nine minutes but Ellis died at the scene.

Analysis

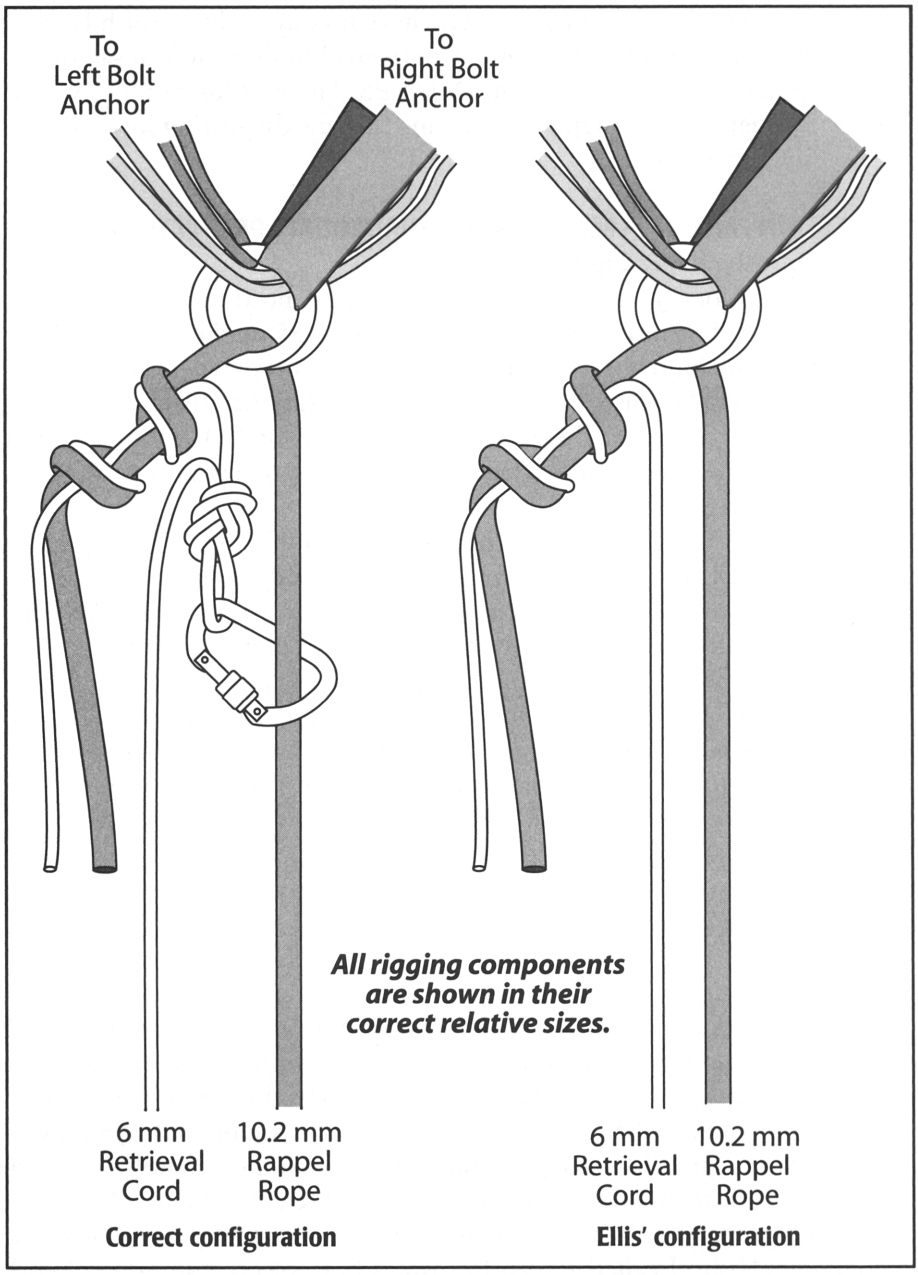
It turned out that both overhand knots had slipped through the rappel rings. The figure-of-eight and carabiner backup should have prevented further slippage, but Ellis had completely overlooked rigging the backup, so there was no figure-of-eight or carabiner in the system. (See illustration facing page.) When Ellis fell there was probably nothing Dhungana could have done to stop him. In Dhungana's post on the Internet he wrote, "When Brian set up this system and tied the knots (I was coiling the ropes in the meantime preparing for tossing), he forgot to tie the backup knot. When I checked the system for him, I too, committed the same mistake and only observed the main knot. [Brian] checked it a THIRD time, and made the same oversight.

"The only explanation I have for this oversight is distraction and complacency. Brian MAY not have been 100% focused on the task (there were several things going on: party coming behind us and he was excited to take photos of the leader below; a few moments earlier on the last pitch, we were rudely and inconsiderately passed up by a speeding simul-climbing party, and this bothered both of us considerably). I am equally guilty of the same distraction and complacency for not having noticed the absence of the backup.

"During every [single-rope] rappel that Brian and I have done together with this system, we have tied the backup knot. The principle overhand knot had NEVER passed through the rings before. However, the one time [the backup figure-of-eight] was forgotten, sadly, was when it was most critical."

When examined after the accident, the primary overhand bend was compressed so much that it passed through the rings with room to spare. Much of the compression was probably due to the subsequent impact of the cord jamming, but Ellis's body weight plus his movements as he took pictures was enough to pull both knots through the rings, even with several strands of cord and webbing from the anchor competing for space. (The illustrations show the actual number of anchor strands, to scale.) These rings were the rolled aluminum type with 1½-inch interior diameter (ID). The ID on some welded stainless steel rings common on modern fixed anchors is smaller, but only by ⅛ inch—hardly enough insurance for a compressible/deformable material like a single knotted rope.

Several variations of the Reepschnur exist, with different characteristics and some with bigger knots, e.g., tying the figure-of-eight on a bight in the end of the rope rather than in the cord. If you're considering the Reepschnur, evaluate all the options and remember that you won't always find suitable anchor hardware in the mountains. If the second rappeller will use a two-rope descent



device—which poses its own risks due to different strand sizes and friction—consider simply tying the single rope to the anchor for the first rappeller.

You might think it unlikely that two intelligent and experienced climbers working together could make the fatal mistakes described here. But ANAM is full of other cases, so before you put down this booklet and turn your

attention elsewhere, remember that you have no way to distinguish Ellis or Dhungana from yourself until you retire from climbing and can say that it didn't happen to you. (Source: John Dill, NPS Ranger. Illustrations by Rick Weber. Special thanks to Japhy Dhungana for quickly posting his report to the climbing community.)

PROTECTION FAILURE – FALL ON ROCK, INADEQUATE PROTECTION
California, Yosemite, El Capitan

In May, Jean-Noel "Jano" Crouzat (48), an experienced French guide, was seriously injured while climbing the Salathé Wall (35 pitches, Grade VI) on El Capitan. The following account was written by his partner on the route, Thibaut "Tibo" Mauron, a member of the Swiss National Team. It has been translated from the original French and edited for ANAM, with bracketed text added by the editors for background. The story starts at Heart Ledges on their second day on the wall:

May 20: We woke up at day light around 6:30 a.m. I led the first pitches up to Hollow Flake Ledge. Jano led the 5.7 chimney, I led the next pitch and then Jano climbed smoothly to belay 19. It was 7:40 p.m. when we were done hauling pitch 19. It was a little late, but still plenty of time to make it to El Cap Spire, [the end of pitch 20], where we planned to sleep, and only one pitch left. We knew that two climbers were sleeping at the Alcove already [a bivy ledge 50 feet up pitch 20] and two were on El Cap Spire.

7:50 p.m: Jano started the lead and after 30 feet, I couldn't see him anymore because he was inside the Alcove. The climbers in the Alcove, John [an American guiding in Tasmania] and Anna [from Germany], were already inside their sleeping bags and having dinner. Jano chatted with them a little and then kept moving up.

Between the Alcove and the Spire there is a 75-foot chimney that is not too hard but not too protectable. Jano placed three pieces on the main wall and later placed another piece. Jano was holding the last piece he placed with one hand and the ledge on top of the Spire with the other hand and was talking with Stefan and Gerta, the two Austrian climbers already there. According to Stefan, that piece—a blue #3 Camalot supporting Jano, was not well placed. It failed, and Jano fell into the chimney, held by his next piece. I didn't hear anything, but felt the rope tighten. Anna and John didn't see anything, but they heard a massive fall sound that they thought was a dropped haul-bag. I called Jano a few times but got no response. Then I heard John say, "Let him down!" I called Jano again, and then heard, "Let him down right now! Slow!" I did so until I heard, "Stop! Now call 911!" *[NPS—Jano had fallen about 65 feet. When they saw him suspended there, John and Anna soloed up a 45° slab formed by a huge flat chockstone leaning into the chimney while Stefan rappelled to them from the Spire. John and Stefan turned*